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BETTER CHRYSANTHEMUMS

Better Chrysanthemums

Some men collect stamps, others play with miniature trains, still others devote themselves to golf. Then, too, there is the *Glockner* staff who enjoy collecting the latest information on Chyrsanthemums and who assemble it for you in this Chrysanthemum Manual.

At one time the chrysanthemum crop was considered a catch crop and during the past several decades the popularity of this flower has made it a main crop flower. With the advent of shading and lighting procedures this crop now can be had to flower the year around.

Other improvements such as cultured stock free from Verticillium wilt disease, soil analysis, 'proper time pinching, newer findings in disease and insect control, better varieties, have all helped in producing better chrysanthemums.

This crop must be carefully planned so as to select only good varieties and eliminate those that are poor and which generally clutter up our markets. The precision culture of chrysanthemums is here to stay and all good growers of quality stock are rapidly following this culture.

By buying from the specialist you can plan your crop to exactly fit your requirements. If your order is placed at the proper time you are reasonably assured of delivery on the date you wish to plant the stock, and because of this you can eliminate at least one operation by planting directly to the bench. In this manual we have collected the latest information on chrysanthemum culture. It is just a part of

the **Glockner** service to keep you advised. We will gladly help you plan your requirements for the coming year.



15 EAST 26th ST., NEW YORK 10, N. Y.

LExington 2-4197

At Madison Square

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TERMS OF SALE

The minimum total order that can be accepted is 500 cuttings.

Fifty rooted cuttings of each variety is the minimum that can be supplied.

More than 50 of a variety must be in multiples of 50.

Unrooted cuttings can be supplied at \$12.50 per 1000 less list price and only in multiples of 250.

BETTER CHRYSANTHEMUMS



Better Chrysanthemums

CUTTINGS

Cuttings taken from vigorous growing stock, free from disease and insects, rooted in sterilized medium and then removed from this medium at just the right time so as to have sufficient root system will give you maximum results in heavier production and better quality chrysanthemums.

Handling Cuttings

The cuttings you purchase are ready for potting or flatting. Many growers plant these rooted cuttings directly into the final location. Ordinarily they will not require shading, but if they have been several days in transit and have softened up some, or if they are planted during warm, bright weather shading with aster cloth or paper is advisable. Under no circumstances leave the covering on the plants during dull weather or at night. It is well to syringe the plants frequently until they stand up and are showing signs of growth.

Unrooted Cuttings

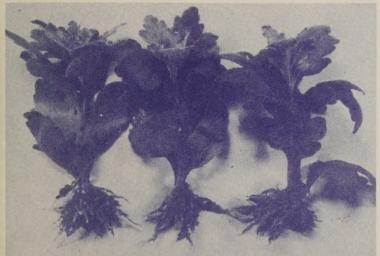
Recent trials have proven that unrooted cuttings can be shipped, and rooted at the destination with good results. Upon arrival sprinkle the cuttings and place in a dark, cool location until they become turgid. Stick the cutting into pots containing a light porous soil mixture. After potting, cover with aster cloth and keep the cloth and soil moist at all times during the day. Rooting will start within 10 days and then handle these plants as you would your other plants.

Delays

The Railway Express Agency has done a marvelous job during the past several years, but occasionally they have had delays. Chrysanthemum cuttings will be injured from cold as well as being too long in transit. If the cuttings are slightly wilted, they can be immersed in water for a short period and then planted. They will react perfectly to such treatment. If the cuttings have been slightly frozen, placing them in a cool room and thawing them out gradually, or placing them in a pail of cool water to take the frost out will bring them through so that they will do just as well as cuttings that have had nothing happen to them. Of course, if stock is badly frozen, or if long delays have occurred so that the cuttings are heated, yellow or rotted, a claim should be filed at once with the express company.

Air Freight

Air freight is prepared to serve customers who are close to an airport, by phoning them when a shipment arrives, or reconsigning shipments via Railway Express to customers who are too far away to pick up shipments at the airport. Our experience this past season indicates that this service is very practical for the delivery of rooted cuttings in the best condition.





Healthy Well Rooted Cuttings

Stock Plants Growing Under Additional Light

CULTURAL POINTERS

Cultural Pointers

SOILS

Chrysanthemums will grow well in a wide range of soil types but a fibrous silt loam is preferred. Blue grass sod to which rotted manure has been added plus an application of super phosphate will give excellent results. A soil that does not remain too open is preferred for this crop.

Acidity

Evidence shows that the soil reaction should be slightly acid pH 6.5, although in many instances a neutral medium does very well. If your soil tests slightly alkaline apply ½ to one pound of agricultural sulfur per 100 square feet of area. However, if your soil is acid apply 3 to 5 pounds of agricultural ground limestone per 100 square feet of area.

Aeration

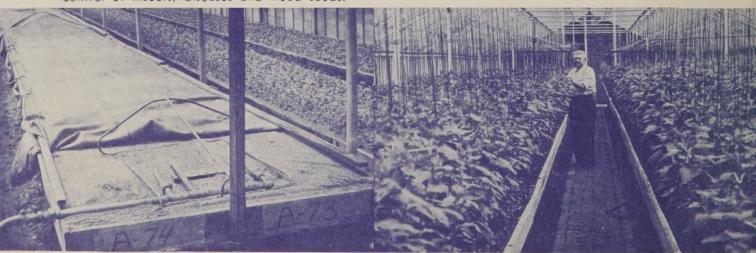
Proper drainage and proper aeration of the soil are very vital to good growth. Many times improper drainage of the bench or bed is the reason for a poor crop. No wet spots should ever be present. Soil drainage may be improved by the addition of various materials. Any coarse organic material such as manure, alfalfa hay or clover hay applied at the rate of not to exceed one fourth the volume will separate the soil particles sufficiently to increase pore space. Heavy applications of sand to a soil have not always proven of value to a chrysanthemum crop. Aeration may also be increased by proper cultivation of the soil. Frequent scratchings are recommended during the early growth of the crop.

Steam Sterilization

Old soil when properly managed will give comparable results with fresh soil. Add a quarter of the volume of humus in the form of manure or chopped alfalfa or red clover hay. Steam sterilize to destroy the verticillium wilt fungus as well as improve the structure of the soil. Steam sterilization may be done with the use of three inch tile or down spouting with ½ holes drilled every six inches on each side of the pipe. Use two lines in a three and one-half toot bench. Ridge the soil to the center of the bench directly over the lines, covering with tarpaulin, canvas or sisalkraft. The Thomas method is very similar with the exception that the pipe is laid on top of the soil and then covered so as to make it airtight. The Thomas method is not recommended where purlin posts are in the bench. By introducing the steam in the center of a 100 foot bench and sending the steam both directions a more thorough sterilization is accomplished than if the steam were to be forced in at the end of the 100 foot bench. Cover the sides of the benches so that the entire bench and contents are heated to 180°F. Remove the covering one hour after the steam has been cut. This allows the excess moisture to pass from the soil as vapor. Leach heavily immediately after sterilizing to reduce excess fertility.

Chemical Sterilization

A chemical which has proven its worth is Larvacide. This material must be used when the green-houses are empty to avoid injury to adjoining crops. This gas is applied in liquid form with a special applicator so that 2 or 3 c. c. are applied at 10 inch centers. The soil should be moist before applying. A good suitable covering should be placed over the treated soil to keep the gas in the soil for at least 48 hours although a water seal applied 2 to 3 times every 24 hours will suffice. The soil temperature should be at least 60 degrees or higher. When used properly you can expect favorable control of insects, diseases and weed seeds.



Thomas Method of Steam Sterilization

Supporting Large Flowered Mums



Cultural Pointers

PLANTING

Chrysanthemums grow equally as well on a raised bench or on a ground bed. The care is slightly different in that raised benches dry out more frequently during the summer and early fall months. It must be remembered that a good circulation of air is desirable, yet a direct draft is not advisable.

Planting Date

The plants to be shaded should be planted seven weeks before the shading date in order that sufficient growth is made to give necessary height before black cloth is applied. For normal flowering all planting should be done in the month of June. The plants should be established in the soil three to four weeks before pinching.

Planting Rooted Cuttings

Many florists are planting rooted cuttings directly into permanent locations. This not only reduces several handlings and production costs, but also produces a better quality bloom. We fully realize that it is often an impossibility for all to treat their chrysanthemums this way. However, we have found that young, soft plants are superior to hard woody plants.

When planting rooted cuttings either into 21/41 pots or directly into the bench, dip the cuttings, roots and all into a solution of **Fermate** I ounce to 4 gallons of water. This will establish the plants faster as well as protect the young plant from septoria leaf spot. If you plant in a cloth house or directly in the open be sure to add this to your must list.

Shading the Glass

When planting rooted cuttings into their permanent position it is necessary to shade the glass or to put aster cloth directly over the young plants until they are established. When shading the glass be sure that the material is applied lightly.

It is definitely advantageous to have some shade on the glass during the months of June and July when the light intensity is the highest. Cloth houses eliminate approximately one-third of the light and we all know what excellent results are obtained under this enclosure. Therefore, shading the glass lightly should likewise be beneficial. Remember not to allow the shade to remain on the glass too late in the season.

Distance of Planting

For good quality pompons we prefer to plant 7x8 inches or 8x8 inches pinched once, and thin the shoots to three per plant. Nothing is gained by planting at a closer distance. Light intensity should be high at the base of the plant for quality blooms and if planted too close we have lost their factor which promotes quality. Large flowered varieties are generally planted 8x8 inches or 8x9 inches, this also applies to disbud anemone and single varieties.

Several growers have had success by planting two plants to a hill, spacing the hills 10x10 inches, pinching once and allowing six sprays per hill. This will require a few more plants but it is claimed that when planted further apart it is easier to spray and string. A higher production per square foot is obtained.

Knowledge of the varieties, date of benching as well as your method of growing will largely govern the distance of planting.



Supporting Shade Cloth in Cloth House



CULTURAL POINTERS

Cultural Pointers

FERTILIZERS

Soil structure is the key to soil fertility. The response of chrysanthemums to fertilization depends upon a favorable soil structure. It is known that plants require nutrients, water and air for growth. Good soil structure will provide proper air and water relationships. Therefore, it behooves us to give proper attention to the soil before starting the crop.

Feeding

Chrysanthemums do much better right from the start if the soil is not too rich. Very often this crop will start off faster in new soil as compared with old soil that has been sterilized just because of the lower nutrient level in the new soil. When using new soil, apply 3 to 5 lbs. of super phosphate per 100 sq. ft. of area, plus a liberal application of manure before planting. Phosphorus moves slowly within the soil mixture. It should always be added before the crop is benched so that it may be mixed thoroughly into the soil. Two to three applications of a complete fertilizer, such as Electra, made after the plants become established and until color shows will be adequate. Electra applied at the rate of 2 pounds per 100 sq. ft. of bed is sufficient. Never apply fertilizers to a dry soil. Water lightly first, then apply the proper quantity of fertilizer, then water heavily. Remember that the plant is the best guide as to fertilizer requirements and that more mums are ruined by over feeding than by nutrient deficiencies.

When using sterilized soil the best recommendations to follow would be to analyze your soil from time to time. We have found that when the following nutrient levels are kept, good crops are the result. Nitrate nitrogen should be 10-25 parts per million; phosphorus 2-5 parts per million; potassium 20-40 p.p.m. and calcium near 150 p.p.m. To increase the nitrate level feed one pound of ammonium sulfate per 100 sq. ft. of area, and to bring up the potassium apply muriate of potash not to exceed 1 lb. per 100 sq. ft.

In the cooler weather and shorter days of September omit the nitrogen if the plants are growing freely. The mum assimilates more phosphorus and potassium during the fall when temperatures decline. Therefore, it is more desirable to apply a complete fertilizer shortly after the buds are visible.

Excesses

The foregoing pertains to plants that appear and behave normally. If plants are stunted, look yellow and sick, they are probably suffering from an extremely rich soil. Many greenhouse soils are excessively rich and chrysanthemums will not thrive in such a medium. If this is the case, the remedy is leaching with water. Lots and lots of it. Use more water than you ever applied to a bench before, two or three gallons per square foot. The water that runs through the soil carries with it the excessive plant food and allows your plants to recover from their indigestion. Did you ever notice fine healthy growth on a small part of a sick-looking bed of mums, and observe that it was under a broken pane of glass that allowed the rain water to come through and leach the soil below? Such a sight is a sure indication that the soil needed leaching. In most cases this condition is the result of the foolish and indiscriminate use of fertilizers. Use them when needed, but use them judiciously. Remember fertilizers are plant food in an extremely concentrated form.

Mulches

A mulch of peat, rotted manure, alfalfa or red clover hay applied two to three weeks after planting will help maintain a uniform moisture in the soil and increase the growth. The strawy mulches should only be used when the nutrient level is high as the bacteria remove the nutrients from the soil to decompose the strawy mulch.



Cloth House Structures Covering Two Beds. Black Cloth Is Drawn Over Camouflage Cloth

Cultural Pointers



Well Established Young Plant



Top Several Inches Removed



Strong Breaks Resulting from Single Pinch

PINCHING

For a good number of years the reason for pinching was to regulate the number of stems on the plant. In recent years we have learned that in case of pompons or singles the pinching determines the type of spray formation. With standards, pinching will determine the type of bud formation, whether it be a crown or terminal bud.

Time Pinching

The precision culture of chrysanthemums is all set-up around the "Last Pinch". To grow a quality pompon you should receive the rooted cuttings sometime in June and then plant into the permanent location approximately three weeks before the date listed in our list of varieties under "Last Pinch". When growing shaded pompons the "Last Pinch" should be 35 days before the shading date. With standards under black cloth the majority of varieties should likewise be pinched 35 days before shading date.

Time pinching standards will eliminate the formation of the crown bud and produce terminal buds

which will in turn produce a much straighter flowering stem.

All pinching should be finished by the early part of August as too late a pinching might encourage blindness and short stem length. We do feel that those people who grow their mums on ground beds should pinch about a week earlier than those on raised benches.

Pruning

Another important factor is to remove all shoots but 3 or 4 per plant, in a few instances only 2 shoots are allowed to mature. When fewer breaks are selected the planting distance should be closer. If you prefer to have a number of smaller sprays, with fewer blooms open at one time, follow the double pinching procedure.

Standards are usually pinched once to induce breaks so that they may be grown two per plant. The strongest breaks are selected and all others removed. It is well to pinch on the date suggested in the general list. Careful observation has shown us that neckiness with some varieties is eliminated by pinching on the respective dates. Singles and anemones are usually grown 3 to 4 stems per plant.

Condition of Plant

When pinching, remove only the soft growth, never cut into the woody stems as this will not produce the type of breaks you desire. It is our experience that it is best not to pinch until the plant has become well established in its permanent location. In all cases it is better to have at least eight to ten inches of growth on the plants before pinching. (Photos above.)

When double pinching, pinch the first time 30 days before the "Last Pinch". This allows enough

time to produce a growth long enough to pinch at the proper time.

If by chance you are delayed in planting and your plants will be too tall, it is advisable to pinch early enough before benching so that the breaks will be several inches long at time of planting. Never pinch hard plants at the same time they are planted into the bench, a heavy loss may result. Better wait until plants are established, then pinch.

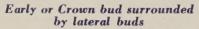
The last pinching dates given after each variety will help you grow that variety to excellency. Remember that pinching is just one cultural factor and will only function when all other cultural points

are carried out properly.

CULTURAL POINTERS

Cultural Pointers







Late or Terminal bud surrounded by flower buds



Late or Terminal bud selected

DISBUDDING

Large flowered varieties produce side shoots in the axils of the leaves which should be removed very close to the base at regular weekly intervals. Disbuds are handled the same as standards.

Taking Bud

The chrysanthemum usually produces two distinct types of flowering buds—Crown and Terminal. The first bud produced is called the crown bud and is distinguished by being surrounded by other lateral leaf buds. The second is the terminal bud and is surrounded by several flower buds. If the plant is planted especially early, a second crown bud might appear. In appearance this second crown bud is exactly the same as the first.

The procedure of "Taking Bud" depends very largely on the variety. Usually the safest rule to follow is not to select a bud on early or midseason varieties before August 25 and never select a crown bud on late flowering varieties. In our list of large flowered varieties under "Select Bud" you will find the date on which to select the proper bud. If bud is selected too early a large percentage of the flowers will be crippled.

The formation of the crown bud usually does not take place when growing according to the "Time Pinch Plan".

The final selection of bud should not be made when the cluster buds are too small as this will very likely cause injury to the stem near the bloom. Likewise it is not advisable to delay selecting the bud too long. Some growers like to leave an alternate bud until they are certain that nothing will happen to the one finally selected.

DISBUDDED SPRAYS

The procedure in growing disbudded sprays, is to wait until the crown bud forms, then remove all vegetative shoots but three. Later when terminal buds appear disbud each shoot similar to the normal disbudding of standards. When the blooms mature there are three flowers on each spray. In singles and anemones, the size of the blooms will be a trifle smaller than when they are grown as one flower per stem. Raise three stems per plant similar to straight disbuds. Varieties such as Goldsmith, Valencia, Europa, etc., can be grown as disbudded sprays.

Good Chrysanthemums result from the careful and thorough practice of the basic principles of plant growth, plus the acknowledgment of certain differences in the nature of various varieties. Growing disbudded sprays is a modification in culture which is very much worthwhile.



7

Cultural Pointers

WATERING

The knowledge of proper watering is essential to success. Chrysanthemums produce extremely heavy foliage and a great deal of water is required at the roots, and under ordinary conditions of bench culture overwatering would be difficult. When grown in beds more care should be exercised in watering. After benching young plants grown in 21/411 pots, spot watering around the plants is more desirable than watering the entire area. When the plants become established the entire area should be given a thorough watering. A trowel should be used to examine the soil to determine the necessity of watering. Some soils look wet on the surface but are very dry several inches below.

When planting rooted cuttings directly into their permanent locations it is essential to water thoroughly to set the soil around the plant roots. We suggest double watering again when the soil gets on the dry side. By this time the plants are established and regular watering should be followed. Keep humidity in the house by wetting down bench and walks.

Leaching

Many greenhouse soils are excessively rich and chrysanthemums will not thrive in such a medium. If this is the case, the remedy is leaching with water. After the soil is sterilized it should be leached. Use a skinner line and allow it to run for hours if necessary. Raised benches do not require as much water to leach.

Syringing

During the heat of the summer it is beneficial to syringe or spray the foliage of chrysanthemums. When syringing is started around 8:00 A.M. and continued at regular intervals, with the help of a light shade on the glass, the house temperature can be kept down and the humidity raised within the house. When the growth becomes thick or when the nights get chilly discontinue all syringing. Some growers who grow quality mums tell us that they do not syringe their crop during the entire season.

TEMPERATURE

This crop will make its most growth during cool weather. During the summer, syringing overhead plus a light shade on the glass will help keep the plants cool.



Blindness

Blindness may be a combination of late planting, late pinching, too much moisture, too rich a soil and too low a temperature at bud initiation. It has been shown that if chrysanthemums are grown in temperatures much below 50° at the time of bud initiation the plants will remain vegetative and will not form flower buds. Blindness is usually associated with those varieties which flower the latter part of November or later. Not all varieties initiate buds at the same date. The late flowering varieties may not set bud until October.

To overcome blind growth keep a night temperature of 55 - 60° from September 15 on until the buds are visible. Likewise run the soil moisture low and do not feed during this period. After the buds are visible it is safe to reduce the temperature to 50°.

When growing chrysanthemums "The Year Around" it is very important to maintain a temperature of 60° during the period of bud formation or blindness and poor budding will result.

Verticillium Wilt Showing Wilting of Lower Leaves



Chrysanthemums The Year Around

Chrysanthemums can be produced at any time of year, providing day length, temperature, insects and diseases are controlled correctly. Our research workers in various federal and state institutions have shown us that a crop of chrysanthemums can be harvested every four months.

The chrysanthemum has great variety of colors and types and also has excellent keeping quality. Both the retailer and consumer are interested in this and they will welcome the addition of chrysan-

themums the year around.

Season has been elimiated and the flowering time can be accurately controlled. You can use varieties that are best for your market. Some varieties are execllent for the August to November bloom but are worthless during the winter and spring months because of the poor light intensity at that time.

Daylength Control

It has been known that the days are short enough for bud formation around September I. This will vary somewhat depending upon your location in the States. To prevent flower buds from forming it is desirable to lengthen the day with additional light starting August 15. When one is using black cloth to reduce the length of the day the treatment can be discontinued September I. Similarly in the spring the days are too long for further bud formation starting April 15. To prevent bud formation light the plants until April 20. If you want bud formation start shading March 15, or a little earlier if you are in the extreme southern states.

Black Cloth

If you are using black cloth during the period from March 15 to July 25 be sure to have opaque cloth so that very little light passes through the cloth. Cloth that has been previously used very likely will not be dark enough, so make tests with a light meter before using. Heavy canvas dyed a dark color has proven to be satisfactory.

Amount of Additional Light

Cornell University recommends the use of 60 watt lamps with reflectors spaced at six foot intervals, three feet above the plants. Light should be applied from midnight to 12:30 a.m. from August 15 to September I and February 15 to April 15. During the period from September I to February 15 it is necessary to use four hours of additional illumination from midnight to 4:00 a.m.

Temperature Control

For bud formation a minimum temperature of 60 degrees should be maintained. During the period of elongation or where bud formation is not wanted a night temperature near 55 degrees is ideal but some investigators find that 50 degrees is satisfactory. When black cloth is started raise the night temperature to 60 degrees until color shows, and then it can be lowered.

Timing 15 - 30 - 60

Rooted cuttings previously grown under additional light should be planted directly into the permanent location and 15 days later should be pinched. A soft pinch should be made. Allow 30 days after pinching for the period of elongation before applying the short day treatment. 60 days of short day treatment are necessary before blooms are ready to cut. The following schedule should be followed to regulate your blooming period throughout the year.

Varieties

The selection of varieties is of extreme importance. The varieties to use for January, February and March flowering should be those that bloom naturally the end of November and the early part of December. Use only the more vigorous growing varieties such as Golden Jane, Apricot Valencia, Valencia, Sunnyside, Omega and Seafoam.

For blooming in April, May and June, workers at Ohio State found that varieties such as Sunray, Yellow Arcadia, White Mensa, Shasta, Pinocchio, Minong, Arcadia responding most favorably.



Chrysanthemums The Year Around

SCHEDULE FOR FLOWERING CHRYSANTHEMUMS THE YEAR AROUND

Planting Date		Pinching Date			Apply dditional Light	Apply Black Cloth	Blooming Period
January	1	January	15	Jan. 1	— Feb. 15	March I on	April 15 — 25
February	1	February	15	Feb. I	— Mar. 15	March 15 on	May 15 — 25
March	1	March	15	Mar. I	— April 15	April 15 on	June 15 — 25
April	ĺ	April	15	April I	 15	May 15 on	July 15 — 25
May	1	May	15	None		June 15 on	August 15 — 25
June	1	Natural Flo	wering	g Period			
July	1	Natural Flo	wering	g Period			
August	-1	August	15	Aug.: 15	— Sept 15	None	November 15 — 25
September	-	September	15	Sept. 1	— Oct. 15	None	December 15 — 25
October	1	October	15	Oct. I	— Nov. 15	None	January 15 — 25
November	1	November	15	Nov. I	— Dec. 15	None	February 15 — 25
December	1	December	15	Dec. I	— Jan. 15	None	March 15 — 25

USEFUL HINTS

- I-Regulate the daylength according to the schedule.
- 2—Maintain a minimum temperature of 60 degrees for bud initiation.
- 3—Plant rooted cuttings directly, which have been grown specifically for this type of culture.
- 4—Pinch the established cutting 15 days after benching.
- 5—Allow 30 long days for elongation period after pinching before applying short day treatment.
- 6—Select early flowering varieties for April, May and June flowering periods. Use naturally late flowering varieties for January, and February flowering.
- 7—Standards, Pot-Plants and Pompons respond alike to this flowering treatment.
- 8—Be careful that the light from the bench treated does not light a bench nearby that is not treated.
- 9—Use opaque cloth from March to July 25.
- 10-Follow proper cultural practices found elsewhere in this manual.



CULTURAL POINTERS

Cultural Pointers

CUTTING FLOWERS

Quality flowers can be easily ruined by improper cutting and marketing. Standards should have their centers well developed before cutting as half open blooms will not have good keeping qualities. Pompons are ready to cut when the majority of the buds on the spray are open. If pompons are allowed to remain on the plant too long the quality is greatly reduced. There is also a great difference in weight of pompons cut when ready as compared with those held on the plant for some time before cutting. The Chrysanthemum Society of America recommends that pompons be marketed in 9 ounce bunches. Pompons should be bunched in neat uniform bunches with the blooms on one plane and the stems all cut to one length. Tie the bunch lightly at the top and firmly at the base with string to prevent the flower heads from tangling with other bunches when handled.

There is a possibility of marketing pompons by the dozen stems provided a uniform spray can be grown by following the precision growing procedure.

SHIPPING FLOWERS

Packing of cut flowers should be carefully studied. The most common error is over-crowding in the shipping boxes. Not securely fastening the blooms in the box will cause bruising of the petals. Cleating or sewing the stems to the box is essential. Cushion the blooms by placing enough padded paper on the bottom of the corrugated box and between the layers of blooms. Wrap the pompons with a loose wrapper. The wrapping paper could have the name of the grower printed on it. Long distance shipments carry better if the cut flowers are packed dry. Reduction of temperature is accomplished by precooling the packed cut flowers.

CULTURED STOCK

Through the development of science your chrysanthemum cuttings have all been grown from stock that has been cultured to determine the presence or absence of the fungus that causes Verticillium Wilt or more commonly referred to as Seidewitz Disease. The culturing of cuttings is to place bits of the stem of a cutting into the gelatine-like agar medium which is used for growing fungi. If the tissue is not infected, no growth of Verticillium develops. As each cutting is cultured it is placed in sterile propagating benches spaced six inches each way. After 10 days of incubating the agar plates one can determine if the wilt organism is present in the tissue. All the cuttings that show the presence of Verticillium are discarded and only those that show a negative reading are saved and grown into stock plants. This clean stock must be grown under sterile conditions at all times as cuttings can be easily contaminated when planted into soil that has the Verticillium organism present.

Verticillium wilt undoubtedly is the worst disease of the Chrysanthemum. If you obtain cuttings propagated from cultured stock and provided you grow your plants in clean soil this disease should not be of any trouble to you.

Well Packed Box of Good News and Detroit News

General View of Propagating Houses





Complete Cloth House Construction

Measure out a perfect rectangle on the ground, each side of the rectangle being 33 feet, or if larger, some multiple of 33 feet. Posts to be placed in the ground three feet deep, to carry the wires at positions that will line the wires in 161/2 foot centers, in every direction.

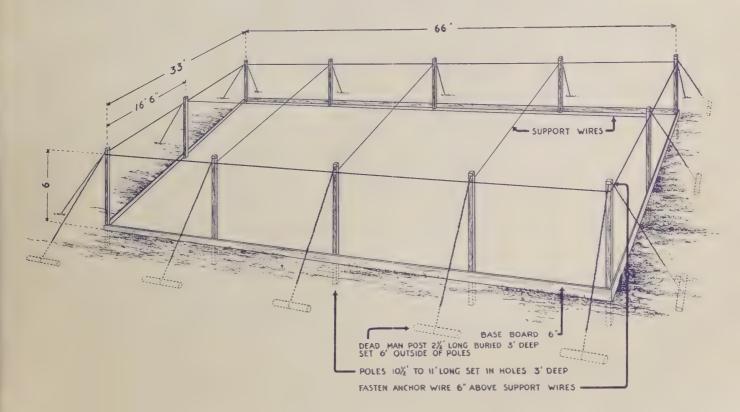
Each outside post must be anchored rigidly with a dead man, and each corner post must have two dead men. Nail the 6-inch baseboard in position around the outside of the house. Place two 1½ inch staples six feet above the ground on each post so the No. 8 galvanized wires will pull through easily and use wire stretchers to stretch the wires taut.

To cover the top unroll the cloth at one end of the frame and with several men lift it across the support wires, unfold a few yards lengthwise beside the frame, then take the selvage edge of the house top and the selvage edge of the sidewall and roll them together five times around the side wire, where you have surplus cloth on the ends wrap this around the wires and sew it. Pin the cloth in place with 8 penny wire nails, pin 10 or 15 feet before you begin to sew, stretch the cloth only enough to keep the sagging out and be sure to keep the lengthwise reinforcement woven lines at an even distance parallel with the length of the wire.

Start at the post and sew by whipping around the wire using a tight lock stitch, so that the cloth will not slip. After this side is finished unfold the cloth to the other 33 feet side support wire and pin before sewing, making sure that the woven reinforced lines are at an even parallel distance from the support wire, sew ends with the same method. Only sew the cloth to support wires, fasten the sidewalls to the baseboard with the new aluminum fasteners every 9 inches.

A very good idea to prevent the cloth from chafing and wearing out the yarns is to cover the rough joints of the baseboard and also wrap the posts with either heavy paper or old cloth. Painting the cloth with **Cuprinol** at the baseboard and at the posts will prolong the life of the cloth.

The beds are laid out lengthwise in the house. The width of the beds may be made any width. It has been found that 5 beds 56 inches wide or 6 beds 44 inches wide are the easiest managed in a 33-foot house. It is best to put a 6-inch board around the border of each bed. The board will keep the water from running into the walks and makes for easier management of the house.





The Use of Black Cloth Shading to Advance the Flowering Season

The commercial use of applying black cloth to advance the flowering season has been used successfully for the past sixteen years. The biggest change has not been in the application of the cloth but has come about with varieties and their culture. The varieties in the following list lend themselves to black cloth shading. The dates opposite the varieties are those found satisfactory when the given blooming date is desired.

USEFUL HINTS

- I—Use a good durable Black Cloth which when applied will reduce the light intensity to 2 foot candles or less. More light intensity than this will result in delayed flowering and unevenness of bloom.
- 2—Short day treatment matures the plants earlier, therefore it is necessary to have the pompons 12 to 15 inches high and the standards 18 to 24 inches high when the shading treatment is started. When plants are short at the start of the shading period you will have short cut flowers when ready to cut.
- 3—The cloth should be applied at 5 P.M. and removed at 8 A.M. Continue covering each evening on pompons until the latest buds show color and most of the flowers are well developed. For large flowering varieties shading can be discontinued after all flowering buds have attained the diameter of approximately one half inch.
- 4—Be sure that covering is complete on all benches shaded, as any leaks in light will cause uneven spots in the bench at blooming time.
- 5—When shading out of doors or under aster cloth, it has been found that metal clamps similar to those used in battery shops will hold on the black cloth better than clothes pins or safety pins.
- 6—When growing large flowering varieties outdoors give some protection as rain and wind storms play havoc when not protected.
- 7—Best results are obtained when varieties of approximately the same blooming date are used for any one particular shading. When a spread in blooming dates is desired, repeated shading of a few varieties at weekly or ten-day intervals has proven more satisfactory than grouping a large number of varieties into any one shading. The shading dates given are those which have been found to be best for the respective varieties. We recommend benching six weeks prior to shading.
- 8—Continue to give the plants which are being given the short day treatment the same care as those grown normally. We have collected the data on the ideal time to bench and pinch for the respective dates of bloom when shading is started at various dates. This is found in the tables on the following pages.
- 9—Select the first bud on standard varieties that appears after shading is started.
- 10—Black cloth should be applied each evening although missing one night a week will give fair results but delayed flowering results when cloth is not applied each evening.

As an added suggestion, we would recommend the removal of black cloth after night fall to allow for a better circulation of air. This would prevent the accumulation of dampness and the unfavorable results that usually occur therefrom. This of ocurse will cause considerable extra work as the cloth must be replaced before morning. We feel however, that as this will improve the growth and the foliage it will be well worth the effort. Perfection is never obtained without added effort.

SHADING INFORMATION



Large Flowering Varieties

	- Tool gr	<u> </u>	city contettes		
Blooming Recommended Period Varieties	Color	Shading Date	Blooming Recommended Period Varieties	Color	Shading Date
AUGUST 18 — 23			SEPTEMBER 22 — 27		
BLAZING GOLD SILVER SHEEN OCTOBER ROSE HILDA BERGEN	Y. W. P. B.	June 19 June 19 June 22 June 19	GOOD NEWS IND. YELLOW YELLOW MEFO BETSY ROSS	Y. Y. Y. W.	July 21 July 17 July 9 July 21
AUGUST 26—30 BLAZING GOLD GOOD NEWS SILVER SHEEN BETSY ROSS OCTOBER ROSE HILDA BERGEN DETROIT NEWS	Y. Y. W. W. P. B. B.	June 26 June 23 June 26 June 23 June 29 June 26 June 23	IND. WHITE MONUMENT MEFO OCTOBER ROSE IND. PINK ORCHID QUEEN DETROIT NEWS IND. BRONZE ANACONDA	W. W. P. P. Dk. P. B. B.	July 17 July 13 July 9 Aug. 4 July 17 July 17 July 21 July 17 July 17 July 13
SEPTEMBER 1 — 6					,
BLAZING GOLD GOOD NEWS IND. YELLOW SILVER SHEEN BETSY ROSS IND. WHITE OCTOBER ROSE IND. PINK HILDA BERGEN DETROIT NEWS IND. BRONZE	Y. Y. Y. W. W. P. P. B. B.	July 3 June 30 June 26 July 3 June 30 July 26 July 14 June 26 July 3 June 30 July 26	GOOD NEWS IND. YELLOW YELLOW MEFO BETSY ROSS IND. WHITE MONUMENT MEFO OCTOBER ROSE IND. PINK ORCHID QUEEN DETROIT NEWS	Y. Y. Y. W. W. W. W. P. P. Dk. P. B.	July 28 July 24 July 28 July 24 July 20 July 16 Aug. 11 July 24 July 24 July 24 July 28
SEPTEMBER 8 — 13			IND. BRONZE	В.	July 24
BLAZING GOLD GOOD NEWS IND. YELLOW SILVER SHEEN BETSY ROSS IND. WHITE MONUMENT OCTOBER ROSE IND. PINK HILDA BERGEN DETROIT NEWS IND. BRONZE SEPTEMBER 15—20	Y. Y. Y. W. W. W. P. P. B. B.	July 10 July 7 July 3 July 10 July 7 July 3 June 29 July 21 July 3 July 10 July 7 July 3	ANACONDA OCTOBER 6—II GOOD NEWS IND. YELLOW YELLOW MEFO BETSY ROSS IND. WHITE MONUMENT MEFO IND. PINK ORCHID QUEEN DETROIT NEWS	B. Y. Y. Y. W. W. W. W. Dk. P. B.	Aug. 4 July 31 July 23 Aug. 4 July 31 July 27 July 30 July 31 July 31 Aug. 4
		lul., 17	IND. BRONZE	В.	July 31
BLAZING GOLD GOOD NEWS IND. YELLOW YELLOW MEFO SILVER SHEEN BETSY ROSS IND. WHITE MONUMENT MEFO OCTOBER ROSE IND. PINK ORCHID QUEEN HILDA BERGEN DETROIT NEWS IND. BRONZE	Y. Y. Y. W. W. W. W. P. P. Dk. P. B. B.	July 17 July 14 July 10 July 2 July 17 July 10 July 6 July 2 July 28 July 10 July 10 July 10 July 17 July 17 July 17 July 10	ANACONDA OCTOBER 13 — 18 GOOD NEWS IND. YELLOW YELLOW MEFO BETSY ROSS IND. WHITE MONUMENT MEFO IND. PINK ORCHID QUEEN DETROIT NEWS IND. BRONZE ANACONDA	B. Y. Y. Y. W. W. W. Dk. P. B. B. B.	Aug. 11 Aug. 7 July 30 Aug. 11 Aug. 7 Aug. 3 Aug. 6 Aug. 7

PLANT 7 WEEKS BEFORE SHADING DATE. LAST PINCH 35 DAYS BEFORE SHADING DATE.



Pompons, Decorative, Single and Anemone Types

Blooming Recommended Period Varieties	Color	Shading Date	Blooming Recommended Period Varieties Color	Shading . Date
AUGUST 4—9			SEPTEMBER I — 6	
YELLOW IRENE GOLD COAST IRENE PINOCCHIO DARK PINK JEWELL CAROLINE YOSICK	Y. Y. W. W. P. P.	June 8 June 5 June 8 June 5 June 8 June 5 June 5	GOLD COAST Y. YELLOW DOT Y. YELLOW DAISY Y. YELLOW ARCADIA Y. BARCAROLE Y. NUGGETS Y.	July 3 June 30 June 30 June 26 June 26
AUGUST 11—16 YELLOW IRENE GOLD COAST IRENE PINOCCHIO PINK PEARL JEWELL DARK PINK JEWELL CAROLINE YOSICK	Y. Y. W. W. P. P. P.	June 15 June 12 June 15 June 15 June 15 June 15 June 15 June 15 June 12	YELLOW BUSHNELL Y. PIXIE Y. IRENE W. PINOCCHIO W. MINONG W. ARCADIA W. SEA GULL W. REV. BUSHNELL W. LAKME W. FIREBIRD B.	July 6 July 3 July 3 June 30 June 26
AUGUST 18 — 23 YELLOW IRENE GOLD COAST YELLOW DOT IRENE PINOCCHIO MINONG FIREBIRD ADELAIDE ROMAN BRONZE PINK PEARL JEWELL CAPTAIN COOK PINK DOT JESSIE CAROLINE YOSICK	Y. Y. Y. W. W. B. B. P. P. P.	June 22 June 19 June 22 June 22 June 22 June 19	ADELAIDE B. ROMAN BRONZE B. RED DAISY B. NAVAHO B. CASSANDRA B. ROBIN HOOD B. PINK PEARL P. JEWELL P. CAPTAIN COOK P. PINK DOT P. JESSIE P. CAROLINE YOSICK P. OCTOBER PINK P. DARK PINK BULKELEY P.	July 3 June 30 June 26 June 26 June 26 July 6 July 6 July 3 July 3 July 3 July 3 July 3 July 3 June 30 June 26
AUGUST 25 — 30 YELLOW IRENE GOLD COAST YELLOW DOT YELLOW DAISY YELLOW ARCADIA IRENE PINOCCHIO MINONG ARCADIA FIREBIRD ADELAIDE ROMAN BRONZE RED DAISY PINK PEARL JEWELL CAPTAIN COOK	Y. Y. Y. Y. W. W. W. B. B. B.	June 29 June 26 June 23 June 23 June 29 June 26 June 26 June 23 June 26 June 26 June 26 June 26 June 26	GOLD COAST Y. YELLOW DOT Y. YELLOW DAISY YELLOW ARCADIA BARCAROLE NUGGETS Y. YELLOW BUSHNELL PIXIE YELLOW FELLOW IRENE PINOCCHIO MINONG ARCADIA SEA GULL REV. BUSHNELL LAKME FIREBIRD ADELAIDE ROMAN BRONZE RED DAISY NAVAHO B.	July 3 July 3 July 3 July 3 June 29 July 13 July 10 July 10 July 7 July 3 July 3 June 29 July 10

PLANT 7 WEEKS BEFORE SHADING DATE. LAST PINCH 35 DAYS BEFORE SHADING DATE.

SHADING INFORMATION



Pompons, Decorative, Single and Anemone Types

			Ĭ			
Blooming Period	Recommended Varieties	Color	Shading Date	Blooming Recommended Period Varieties	Color	Shading Date
SEPTEMBE	R 8 — 13			SEPTEMBER 22 — 27		
	SANDRA"	В.	July 3	BARCAROLE	Υ.	July 17
	BIN HOOD	B.	July 3	NUGGETS	Υ.	July 17
BR.	BULKELEY	В.	July 3	yellow bushnell	Υ.	July 17
	VANNA	В.	June 29	PIXIE	Y.	July 17
	< PEARL	Ρ.	July 13	YELLOW FELLOW	Y.	July 13
	/ELL	P.	July 13	PRINCETON	Y. · W.	July 9
	PTAIN COOK	P.	July 10	PINOCCHIO ARCADIA	W.	July 24 July 21
JESS	K DOT	P. P.	July 10 July 10	SEA GULL	W.	July 17
	ROLINE YOSICK	P.	July 10	REV. BUSHNELL	W.	July 17
	TOBER PINK	P.	July 7	VESPER	W.	July 13
	S. BULKELEY	P.	July 3	LAKME	W.	July 13
	RK PINK BULKELEY		July 3	LITTLE AMERICA	W.	July 13
			·	MATCHLESS	W.	July 9
	R 15 — 20			SEA FOAM	W.	July 5
	LD COAST	Υ.	July 17	RED DAISY OCTOBER BRONZE	B. B.	July 21 July 21
	LÓW DOT LOW DAISY	Y. Y.	July 17 July 14	NAVAHO	B.	July 17
	LOW ARCADIA	Υ.	July 14	CASSANDRA	В.	July 17
	CAROLE	Υ.	July 10	ROBIN HOOD	B.	July 17
	GGETS	Y,	July 10	BR. BULKELEY	B.	July 17
	LOW BUSHNELL	Υ.	July 10	BR. MASTERPIECE	В.	July 13
PIXI	E	Υ.	July 10	SYLVANNA	В.	July 13
	LOW FELLOW	Υ.	July 6	RED PRINCETON	В.	July 9
	NCETON	Υ.	July 2	BR. GOLDSMITH	B. P.	July 5
	OCCHIO	W. W.	outy 17	CAPTAIN COOK PINK DOT	P.	July 24 July 24
	IONG CADIA	W.	July 17 July 14	JESSIE	Ρ.	July 24
	GULL	W.	July 10	CAROLINE YOSICK		July 24
	. BUSHNELL	W.	July 10	OCT. PINK	P.	July 21
LAk	(ME	W.	July 6	MRS. BULKELEY	Ρ.	July 17
	TCHLESS	W.	July 2	DARK PINK BULKELE		July 17
	EBIRD	В.	July 17	MASTERPIECE BROCADE	P. P.	July 13 July 13
	man bronze) daisy	B. B.	July 17 July 14	BROCADE	Γ.	July 13
	T. BRONZE	В.	July 14	SEPTEMBER 29 — OCTOBER 4		
NA	VAHO	В.	July 10	GOLD COAST	Υ.	July 31
	SSANDRA	В.	July 10	BARCAROLE	Y.	July 24
	BIN HOOD	В.	July 10	NUGGETS	Y.	July 24
	BULKELEY VANNA	B. B.	July 10 July 6	YELLOW BUSHNELL	Y. Y.	July 24 July 24
	PTAIN COOK	P.	July 17	PIXIE YELLOW FELLOW	Y.	July 20
	K DOT	P.	July 17	PRINCETON	Ÿ.	July 16
JES		P.	July 17	GOLDSMITH	Y. Y.	July 12
	ROLINE YOSICK		July 17	PINOCCHIO	W.	July 31
	T. PINK	P.	July 14	ARCADIA	W.	July 28
	S. BULKELEY	P.	July 10	SEA GULL	W.	July 24
DA	rk pink bulkele)	Γ.	July 10	REV. BUSHNELL	W.	July 24
SEPTEMB	ER 22 — 27			VESPER	W.	July 20
		Υ.	July 24	LAKME	W.	July 20
	LOW DOT	Y.	July 24	LITTLE AMERICA	W.	July 20
YEI	LOW DAISY	Υ.	July 21	MATCHLESS	W.	July 16
YEL	LOW ARCADIA	Υ.	July 21	SEA FOAM	W.	July 12
				ACT DINICIL 35 DAVE DEEO!	OF CLIAR	INC DATE

PLANT 7 WEEKS BEFORE SHADING DATE. LAST PINCH 35 DAYS BEFORE SHADING DATE.

SHADING INFORMATION



Blooming Recommended Period Varieties	Color	Shading Date	Blooming Recommended Period Varieties	Color	Shading Date
SEPTEMBER 29 - OCTOBER 4			OCTOBER 6-11		
RED DAISY OCT. BRONZE NAVAHO CASSANDRA ROBIN HOOD BR. BULKELEY BR. MASTERPIECE SYLVANNA RED PRINCETON BITTERSWEET BR. GOLDSMITH	B. B	July 28 July 24 July 24 July 24 July 24 July 20 July 20 July 16 July 16 July 12	BR. GOLDSMITH PINK DOT JESSIE CAROLINE YOSICK OCT. PINK MRS. BULKELEY DK. PK. BULKELEY MASTERPIECE BROCADE UNEEDA	B. P. P. P. P. P. P.	July 19 Aug. 7 Aug. 7 Aug. 7 Aug. 4 July 31 July 31 July 27 July 27 July 19
PINK DOT JESSIE CAROLINE YOSICK OCT. PINK MRS. BULKELEY DR. PK. BULKELEY MASTERPIECE BROCADE UNEEDA	P. P. P. P. P. P. P.	July 31 July 31 July 31 July 28 July 24 July 24 July 20 July 20 July 12	OCTOBER 13—18 GOLD COAST BARCAROLE NUGGETS YELLOW BUSHNELL PIXIE YELLOW FELLOW PRINCETON GOLDSMITH	Y. Y. Y. Y. Y. Y.	Aug. 14 Aug. 7 Aug. 7 Aug. 7 Aug. 7 July 31 July 30 July 26
OCTOBER 6-11			PINOCCHIO	W.	Aug. 14
GOLD COAST BARCAROLE NUGGETS YELLOW BUSHNELL PIXIE YELLOW FELLOW PRINCETON GOLDSMITH PINOCCHIO ARCADIA SEA GULL REV. BUSHNELL VESPER LAKME LITTLE AMERICA MATCHLESS SEA FOAM NAVAHO CASSANDRA ROBIN HOOD BR. BULKELEY BR. MASTERPIECE SYLVANNA RED PRINCETON BITTERSWEET	Y. Y. Y. Y. Y. Y. Y. W. W. W. W. W. W. W. W. B.	Aug. 7 July 31 July 31 July 31 July 27 July 23 July 19 Aug. 7 Aug. 4 July 31 July 27 July 27 July 27 July 27 July 27 July 23 July 19 July 31 July 27 July 23 July 23 July 23 July 23	ARCADIA SEA GULL REV. BUSHNELL VESPER LAKME LITTLE AMERICA MATCHLESS SEA FOAM NAVAHO CASSANDRA ROBIN HOOD BR. BULKELEY BR. MASTERPIECE SYLVANNA RED PRINCETON BITTERSWEET BR. GOLDSMITH PINK DOT JESSIE CAROLINE YOSICK OCT. PINK MRS. BULKELEY DR. PK. BULKELEY MASTERPIECE BROCADE UNEEDA	W. W. W. W. W. W. W. B. B. B. B. B. B. B. P.	Aug. 11 Aug. 7 Aug. 3 Aug. 3 Aug. 3 Aug. 3 July 26 Aug. 7 Aug. 7 Aug. 7 Aug. 7 Aug. 3 July 31 July 31 July 26 Aug. 14 Aug. 14 Aug. 14 Aug. 14 Aug. 14 Aug. 17 Aug. 7 Aug. 7 Aug. 7 Aug. 3 July 26 Aug. 14 Aug. 14 Aug. 14 Aug. 14 Aug. 17 Aug. 7 Aug. 7 Aug. 7 Aug. 3 Aug. 3 July 26



Chrysanthemum Pot Plant Culture

Well grown short pot plants of Chrysanthemums have been finding a ready market in various sections of the country. We feel that many growers have been neglecting this valuable Fall potted plant. In many cases, poor attempts have been made in growing this plant and we offer the following suggestions for your consideration:

VARIETIES—The varieties best suited to pot culture are those which lateral freely and have a medium to low growing habit. A variety whose laterals tend to spread is superior to one with a more upright growth. Good examples are: Bonnaffon De Luxe and Queen of Pinks.

PLANTING—Cuttings may be planted into $2^{1}/2^{1}$ pots in May and later shifted into the larger pot for finishing. If this is done care must be used so as not to get the plants hardened too much before shifting. A more efficient and easier way is to set the large pots on the bench, fill them with potting soil and plant the cuttings directly into the finishing pots.

Three Cuttings should be planted in a six inch pot. While four may be required for a large pot.

WATERING AND HUMIDITY—After planting water thoroughly to set the soil around the plant roots. Repeat this type of watering when the soil gets on the dry side. Organic matter in the soil will facilitate watering and will tend to avoid extreme fluctuations in moisture supply. Keep humidity in house by wetting down bench and walks.

PINCHING—Three pinches are sufficient for a good short compact pot plant. The first pinch should be approximately 15 days after planting. The second pinch about 30 days after planting and the third and last pinch as listed on the chart. Some of the varieties listed grow taller than others, however by observing the last pinching date all the varieties listed should finish reasonably uniform in height. A hard pinch is suggested when the last pinch is delayed until after shading. For example: Yellow Beauty when shaded July 1st and pinched July 11th.

FERTILIZING—The best program is to have regular soil tests and feed as need is indicated by these tests. In absence of these facilities, and starting with a relatively fertile potting soil, several light feedings should be made with a complete fertilizer such as Electra. This can safely be used at the rate of I Teaspoonful per 6" pot. This should be applied when soil is moist and never on a dry soil.

The foliage should retain a bright green lustre throughout the life of the plant, and the lower leaves should never be allowed to lose their color and turn to a light green due to low fertility. A strong well grown pot plant is a well fed plant.

DISEASES AND INSECTS—Pot plants should be sprayed regularly with one of the rotenone insecticides for control of red spider. Pyrethum sprays or tartar emetic will control thrip and leaf tyer. If plants are to be grown outdoors before final potting the foliage should be kept covered with a spray such as Bordeaux Mixture or Fermate to prevent leaf spot. If this is not done considerable foliage loss may result during wet cool weather.

SHADING—Same procedure as for cut flowers. Black cloth should be new or in best of condition for very early shadings to avoid delayed and uneven blooming. When possible take cloth off at night, replacing before daylight.

DISBUDDING POMPONS—Remove center bud except on the button types. This gives better spacing to the remaining flowers. Also the center bud generally matures earlier than the surrounding buds, giving the appearance of irregular blooming and premature aging. Remove this bud as early as convenient.

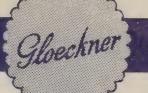
DISBUDDING STANDARDS—Disbudding must be done early, late disbudding results in small flowers and weak and elongated stems directly below the flowers.

HEIGHT—By following our directions pompons grown in 51/2" or 6" pots will be 11" to 13" high. Disbuds will grow 14" to 17" above the top of the pot.

Pot Plant Culture Continuous Blooming Schedule

•	Y E L L O W	1	BRONZE			
Planting	Shading	Blooming	Planting	Shading	Blooming	
Date GOLD LODE	Date	Date	Date HILDA BERGEN	Date	Date	
May 15	July 1	August 28	May 15	July 1	September 1	
June 1	July 15	September 11	June 1	July 15	September 15	
June 15	August I	September 28	June 15	August I	October I	
July I	None	October 10	July I	None	October 25	
BLAZING GOLD			ALAMEDA			
May 15	July I	September 1	May 15	July 1	September 1	
June I	July 15	September 15	June I	July 15	September 15	
June 15	August I	October 1	June 15	August I	October I	
July 1	None	October 25	July I	None	October 25	
GOLDEN GLORY			GLITTERS			
May 15	July I	September 3	May 15	July I	September I	
June 1	July 15	September 17	June 1	July 15	September 16	
June 15	August 1	October 3	June 15	August I	October 2	
July I	None	November I	July I	None	October 28	
CARDONIA	1.11	C : 1 7	APRICOT QUEEN	1.1	C 1. L. 1	
May 15	July I	September 7	May 15	July I	September 3	
June I	July 15	September 21	June I	July 15	September 17	
June 15	August 1	October 8	June 15	August I	October 3 November 1	
July 1 YELLOW BEAUTY	None	November 10	July I GYPSY	None	November 1	
May 15	July 1	September 7	May 15	July I	September 11	
June 1	July 15	September 21	June I	July 15	September 25	
June 15	August I	October 8	June 15	August I	October 12	
July I	None	November 10	July I	None	November 15	
BONNAFFON DE L			BRONZE FRICK			
May 15	July I	September 15	May 15	July I	September 19	
June 1	July 15	September 29	June I	July 15	October 3	
June 15	August 1	October 15	June 15	August I	October 20	
July 1	None	November 20	July 1	None	November 25	
SUN GOLD				PINK		
May 15	July I	September 19	EARLY OCTOBER	FINK		
June I	July 15	October 3	May 15	July 1	August 28	
June 15	August I	October 20	June I	July 15	September 11	
July 1	None	November 25	June 15	August 1	September 28	
	WHITE		July 1	None	October 10	
CHRISTINA		6	PINK IZOLA			
May 15	July I	September 1	May 15	July I	September 3	
June I	July 15	September 15	June I	July 15	September 17	
June 15	August I	October 1	June 15	August I	October 3	
July I	None	October 20	July I	None	November I	
May 15	- July I	September 7	THYRA May 15	July 1	September 7	
June 1	July 15	September 21	June 1	July 15	September 21	
June 15	August 1	October 8	June 15	August 1	October 8	
July I	None	November 10	July I	None	November 10	
LITTLE AMERICAN			QUEEN OF PINKS			
May 15	July 1	September 7	May 15	July 1	September 7	
June I	July 15	September 21	June 1	July 15	September 21	
June 15	August I	October 8	June 15	August I	October 8	
July 1	None	November 10	July 1	None	November 10	
MARKETEER		6	HELEN FRICK	1.1.		
May 15	July I	September 14	May 15	July I	September 19	
June 1	July 15	September 28	June 1	July 15	October 3	
June 15	August I	October 14	June 15	August I	October 20	
July 1	None	November 18	July I	None	November 25	

DATE OF LAST PINCH IS THE SAME AS SHADING DATE.
FOR POT PLANT CULTURE SEE PAGE 17



Insects and Their Control

APHIDS, OR PLANT LICE

All aphids are true sucking insects that insert their beaks through the surface of the leaf or stem and extract the juices from within.

INJURY. The feeding of aphids causes the plants to become sickly and stunted. The leaves curl inward, and when the flower terminal is infested the blooms will be deformed. Certain varieties of chrysanthemums are more susceptible to attack than others.

CONTROL. Nicofume Fumigation is the preferred method of control when a considerable number of plants in a house are found to be harboring aphids. Nicofume Liquid at the rate of 1-400 plus a soap spreader is also very effective. Nicofune dust is very effective against all species of aphids. NNOR, and Loro are also effective. They should be used as directed on the containers.

CHRYSANTHEMUM LEAF MINER

The larva or maggot disfigures and weakens chrysanthemum plants by mining in the leaves. It may do considerable harm to the crop, but is easily held in check.

INJURY. The young maggots burrow in the leaf tissue, leaving the upper and lower surfaces intact. The tunnels are irregular and winding. White blotches are thus formed, which later turn brown, and the leaves may die.

CONTROL. As soon as it is noticed that any leaves are infested, they should be picked off and burned. Nicofume spray will kill most of the maggots before they have time to do much damage.

CHRYSANTHEMUM MIDGE

The chrysanthemum midge is one of the most serious pests with which the grower has to deal. Under optimum conditions a little over a month is required to complete the life cycle from the egg to the adult. The eggs are reddish-orange in color and are usually deposited on the tender tips of the growth. Under favorable conditions, the eggs hatch in about three days. The larva wanders about over the surface of the leaf for a day or two before finally penetrating into the leaf.

INJURY. The midge attacks all parts of the plant but prefers the tender growth. If the infestion takes place when the plants are small, they fail to grow, although if the plants are well developed when the infestation starts, the buds blight or are deformed and the plant is rendered unsalable.

CONTROL. Clean stock should be used wherever possible. Severely infested plants should be pulled up and burned. Nightly fumigation with Calcium cyanide or Nicofume pressure fumigators for 28 consecutive days will give good control. Loro 1-800 plus DuPont Spreader Sticker 1-1200 sprayed every three days for 3 weeks then every week has proven to be one of the best controls. Nicotine Dust is also useful in keeping the plants covered and is especially useful when used in combination with fumigation. Sodium selenate is effective when applied in liquid form 1/4 gram per square foot after plants are well established.



Aphids



Leaf Miner Injury

Insects and Their Control

CORN EAR WORM

The corn ear worm is a green to brown, nearly smooth caterpillar, often mistaken for a cutworm when found within the buds or on the open flowers.

INJURY. It is very destructive to the opening buds, for it feeds on their petals and other parts, deforming if not entirely ruining the flowers.

CONTROL. If the attacked plants are blooming, spraying is out of the question, but thorough treatment with a 3 or 5% D.D.T. dust is recommended. After they have worked their way into the buds and are found to be feeding on the open flowers, hand-picking is the only remedy. Spraying the plants with Deenate 50W will control them before the color shows.

CUTWORMS

The larva is dull-colored and from one to more than two inches in length. They are most active at night, and usually spend the day coiled up just under the surface of the soil at the base of the plant. They should not be confused with the corn ear worm which cannot be controlled by poison baits.

INJURY. Cutworms obtain their food by biting out sections of the leaf, stem or bud. Various species attack different parts of the plant. The one that is most damaging climbs to the top of the stem and eats into the flower buds.

CONTROL. Those cutworms that feed on the foliage can best be controlled with Deenate 50W spray using 1½ pounds to 100 gallons of water. Cutworms are also controlled with a poison bran bait which should be distributed very thinly over the bench several consecutive nights. Poison bait formula consists of 5 pounds of wheat bran, enough water to moisten mash, 4 ounces of Paris Green, 1 pint of molasses and one finely chopped lemon.

GREENHOUSE LEAF TYER

It gets its name from its habit of spinning light webs inclosing two or more leaves or tying together the parts of a single leaf. This caterpillar is very active, and when disturbed will wriggle off the leaf, often backwards, lowering itself on a silk-like strand.

INJURY. When first hatched, the larvae eat out shallow holes on the under side of the leaves. As they grow, they enlarge these holes but usually do not cut through to the upper surface. The result is that the leaves become skeletonized.

CONTROL. The best poison to control the larvae is Deenate 50W, either in the form of a dust or a spray. For liquid spray use 1½ pounds of Deenate 50W to 100 gallons of water. Leaf tyers can also be controlled with tartar emetic. Add two pounds of tartar emetic, 4 pounds of sugar to 100 gallons of water. Spray the plants thoroughly so that the entire plant is covered. Pyrethrum sprays such as Evergreen, Red Arrow Special, New Libersol, and Yamtox will kill the worms and not discolor the foliage.





Corn Ear Worm Damage

Leaf Tyer



Insects and Their Control

MEALY BUGS

Mealybugs are small, sluggish, whitish, soft bodied insects, measuring up to 1/4 inch long, found in clusters on the undersides of the leaves or in the leaf axils.

INJURY. This pest sucks the juices from the stems and leaves, discoloring and deforming the foliage. CONTROL. Regular fumigations with calcium cyanide will aid in keeping mealybugs in check. The combination of Greenhouse Volck 1-50 and Nicofume liquid 1-400 when applied when temperatures are below 90 degrees will give good results. Loro 1-800 and DuPont Spreader Sticker 1-1200 if sprayed when temperatures are not too high is very effective. The old method of syringing with water is still one of the easiest ways to keep the plants free of this insect.

MITES

Cyclamen mite and broad mite are often found on the same plants at the same time. Broad mite could pass through a complete generation in 4 to 5 days at 70 to 80 degrees while the Cyclamen mite will take 4 to 5 times longer.

INJURY. Infested leaves become deformed, curl from the outside inward, and wrinkle so that pockets and pit-like depressions are formed. When the infestation is severe, the mites collect about the buds, causing them to blight.

CONTROL. Thiocide-1-200 and DuPont Spreader Sticker 1-800 is the most effective control measure. We recommend spraying every week or ten days during the growing season. Nicotine liquid 1-400 plus spreader, NNOR may also be used and will give fair control. Sodium Selenate is effective when applied in liquid form 1/4 gram per square foot after plants are well established.

RED SPIDERS

There are several species of red spiders that attack the chrysanthemum. They vary in color through yellow, orange and red. The body is oval in outline and bears eight well-developed legs.

INJURY. Red spiders pierce the epidermis of the leaf and draw the liquid contents from the cells, causing the leaf to turn pale around the injured portion. They prefer to collect on the under surfaces of the leaves, which they cover with silken threads.

CONTROL. Spray thoroughly and heavily with Yamtox or some rotenone sprays as NNOR, L333, OPTOX at intervals of five days until the spider is cleaned up. Moisture is detrimental to the development of the red spiders and frequent syringing washes them and their eggs off the plants. Loro 1-800 plus DuPont Spreader Sticker 1-1200 has given good control but should be applied with caution as it will injure foliage when temperatures are high. Sodium selenate is effective when applied in liquid form 1/4 gram per square foot after plants are well established.

SYMPHYLIDS

Symphylids are small white creatures about $\frac{1}{8}$ to $\frac{3}{16}$ inches long. About 40 - 60 days are necessary for the completion of the life cycle.

INJURY. Symphlids destroy the fine root hairs and small rootlets, thus stunting the plants and often killing them outright.

CONTROL. If possible construct raised bench. Steam sterilization has given fair control. Dowfume G and the new 666 are giving excellent control of this pest.



Mealy Bugs



Symphylids Enlarged 10x

Insects and Their Control

SOWBUGS

INJURY. Sowbugs often become so plentiful in the greenhouse that they eat the newly planted cuttings at the base.

CONTROL. Any of the many poison baits will give partial control but a complete spraying under the benches has given excellent control. Arbortox No. 7 or Deenate 50W will give complete control.

TARNISHED PLANT BUGS

The tarnished plant bug or sting fly comes into the greenhouse through open doors and ventilators in late summer or early fall and does considerable harm to this crop. Chrysanthemums growing in the open are frequently affected. Varieties such as Mary L. Hall and Sea Gull are attacked to a greater extent than other varieties.

INJURY. It has sucking mouthparts and obtains its food by inserting its long, slender beak into the plant tissues and sucking up the contents of the injured cells, apparently injecting saliva, which causes the death of the tissue in the immediate vicinity. The stem is often slightly bent and the terminal growth is malformed because of this injection.

CONTROL. Early morning spraying or dusting with any of the pyrethrum materials will kill those bugs that are present but this will have to be done each day for complete eradication. Deenate 50W has been giving fair control but again this insecticide is best used as a contact.

THRIPS

The chrysanthemum is usually attacked by one or more species of thrips. These small, narrow-bodied, active insects which range in color from yellow to brown or almost black, injure both the leaves and the blossoms.

INJURY. Thrips have mouth parts that are fitted for piercing and scraping the leaf surface and for sucking the juices and other cell contents. The upper surface of the foliage is covered with whitish blotches while minute black specks appear on the lower surface. Unless a constant watch is kept on the plants, and control measures properly executed, thrips are capable of causing severe injury within a short time.

CONTROL. Deenate 50W used at the rate of 1-1½ pounds to 100 gallons of water is the most effective control known. Other insecticides containing D.D.T. are also recommended.



Tarnished Plant Bug Damage (Note Absence of Growing Tip)



Thrip Injury



Pests and Their Control

FOLIAR NEMATODE

The spread of this pest has been very rapid in recent years owing to the increased trade in chrysanthemums, and the ease with which the nematode is transported in plants and cuttings. Too few growers have become familiar with this pest and consequently no effort has been put forth to control it.

SYMPTOMS. The leaves attacked become blotched, turn at first greenish-yellow, then brownish, later gray and finally black until the entire leaf dies and hangs down on the stem. Under conditions of high humidity both in the open during a wet season and under glass owing to excessive watering, the spread of the pest may be extremely rapid.

CONTROL. Sodium Selenate applied in liquid form to the soil at the rate of 1/4 gram per square foot of bed area is the most satisfactory control. Dissolve I pound of sodium selenate into 41/2 gallons of water, then take one quart of this stock solution and add to 25 gallons of water and this should be applied on 100 square feet of bench surface. One pound of sodium selenate will treat 1800 square feet. P40 applied at the rate of 3 pounds per 100 square feet has given fair control. Wait 2 to 4 weeks after benching before applying. This chemical may burn some varieties.

MILDEW

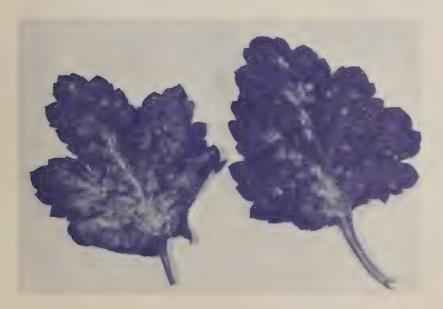
SYMPTOMS. Whitish powdery growth on upper surface of leaves.

CONTROL. Spray at regular weekly intervals with a good Wettable Sulfur, I'lb. per 100 gallons of water to which a good commercial spreader has been added. Fermate, I ounce to 4 gallons of water is effective.

ROOT KNOT NEMATODE

SYMPTOMS. The nematodes or eelworms bore into the roots of the plants and cause knots or galls to develop on the root systems. As a result the plants are weak, yellowish and stunted in growth.

CONTROL. Steam sterilization of the soil is very effective in eliminating the nematodes. **Dowfume G** is a good soil fumigation that will kill nematodes and not do any damage to the surrounding plants.





Dodder Growing on Mums

Diseases and Their Control

ROOT ROT

SYMPTOMS. Entire plant will wilt and recover during the evening. Foliage turns yellow, plant will die in a very short time. A number of soil borne organisms cause the loss of the roots.

CONTROL. Do not plant cuttings that have been infected with damping off. Use sterilized soil.

Remove all affected plants when noticed. Do not keep the soil too moist.

RUST

SYMPTOMS. Chocolate brown powdery pustules on the lower surface of the leaves

CONTROL. Fermate, I ounce to 4 gallons of water is most effective.

SEPTORIA LEAF SPOT OR LEAF BLIGHT

SYMPTOMS. Distinct circular spots on the leaves. These are greyish brown in color and become brittle in the center. Affected leaves may turn yellow and die. More prevalent in the open. Some varieties are more susceptible than others. Sea Gull is very susceptible.

CONTROL. When cuttings are received dunk roots and tops into Fermate (2 tablespoonsful to a gallon). Spray the plants with Fermate I ounce to 4 gallons water plus 1/3 teaspoonful of DuPont Spreader Sticker every ten to fourteen days. Cloth house mums should be kept covered until the buds can be seen. May we recommend that you add the sticker and a little water into a jar then add the Fermate and shake thoroughly. Then dump Fermate from the jar into sprayer with proper amount of water.

VERTICILLIUM WILT OR SEIDEWITZ DISEASE

SYMPTOMS. Margins of leaves turn yellow and eventually wilt or dry up. This begins at base of plant and works up the stems. May affect one side of a stem or plant more than the other. No distinct spots. Varieties vary in resistance to this disease.

CONTROL. Verticillium wilt can be avoided by purchasing our disease free cuttings produced from cultured stock. It is also necessary to plant only into sterilized soil.

DODDER

SYMPTOMS. Dodder is a parasitic twiner, bearing clusters of small flowers. They are leafless annuals, with very slender yellow, white or red stems, which become attached to the plant by means of root-like suckers. Dodder is occasionally found on chrysanthemums and will cause a complete loss of crop.

CONTROL. Dodder is common in low, weedy places and may be carried into the greenhouse in the soil or manure. Soil sterilization is the only prevention. After dodder is attached to the plants remove the affected plants and burn.





Rust on Chrysanthemum

Septoria Leaf Spot

Pests and Their Control

Dilution Table for Liquid Spray Materials

For measuring small amounts of liquids have a set of household measuring spoons, and a glass graduate marked in fluid ounces or a glass measuring cup marked in quarters and thirds.

I pint = 16 fluid ounces (fl. oz.)

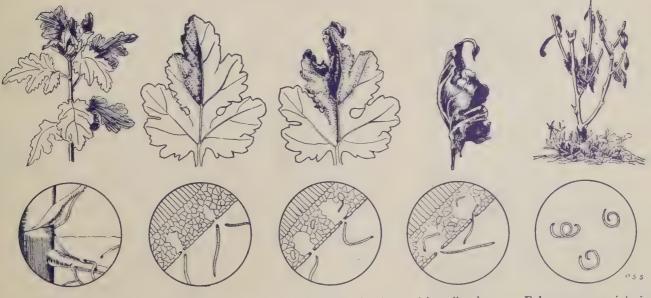
1 cupful = 8 fl. oz.

I fl. oz. = 2 tablespoonfuls (tblsp.)

I tblsp. = 3 teaspoonfuls (tsp.)

Recommended	Amount to use for the following quantities of spray								
Dilution	l gallon	3 gallons	10 gallons .	20 gallons	50 gallons	100 gallons			
1 to 50	21/2 fl. oz.	8 fl. oz.	1½ pt.	3 pint	. I gal.	2 gal.			
1 to 100	11/4 fl. oz.	4 fl. oz.	13 fl. oz.	11/2 pint	2 qt.	I gal.			
1 to 200	4 tsp.	2 fl. oz.	61/2 fl. oz.	13 fl. oz.	1 qt.	2 qt.			
I to 400	2 tsp.	I fl. oz.	31/4 fl. oz.	61/2 fl. oz.	t pint	l qt.			
1 to 600	1 1/4 tsp.	. 4 tsp.	2 fl. oz.	41/2 fl. oz.	11 fl. oz.	1 ½ pt.			
1 to 800	l tsp.	i tbisp.	1 ² / ₃ fl. oz.	31/ ₄ fl. oz.	8 fl. oz.	l pt.			
1 to 1000	3/4 tsp.	21/4 tsp.	11/4 fl. oz.	21/ ₂ fl. oz.	61/ ₂ fl. oz.	13 fl. oz.			
1 to 1600	1/ ₂ tsp.	11/ ₂ tsp.	3/4 fl. oz.	12/3 fl. oz.	4 fl. oz.	8'fl. oz.			
1 to 2000	⅓ tsp.	l tsp.	2/3 fl. oz.	11/4 fl. oz.	31/ ₄ fl. oz.	61/4 fl. oz.			

BIOLOGY OF THE FOLIAR NEMATODE



Eelworms becoming active and commencing their migration from the ground up the outside of the stem and leaf-stalks into the basal leaves.

(Spring)

Eelworms entering leaf through the stomata.

(Spring-Summer)

Eelworms feeding and breeding in leaves and migrating upwards from leaf to leaf.

(Spring-Autumn)

Eelworms overwintering in soil, dead leaves and in basal buds.

(Winter)

Novelty Chrysanthemums



CAROLINE YOSICK

This small, lavender pink pompon responds exceptionally well to black cloth shade and is particularly of value for August or September flowering along with Pinocchio and Gold Coast. You will welcome its dependable growing habit, as unlike Jewell, it does not crown, and compared with Jessie and Pink Dot, it has a more rigid stem than either one. The small decorative flower has excellent color-holding qualities even under the earliest shadings. Caroline Yosick shows up best under artificial light that remarkably softens or brightens the color. Natural blooming season October 20. Price \$90.00 per 1000.

GOLD COAST

A small, intense deep yellow pompon of firm substance flowering naturally October 25. Since Gold Coast can be shaded ideally, we are recommending it along with Pinocchio and Caroline Yosick as the important trio for shading in 1947. It has the same clean, vigorous free growing habit of Pinocchio and also resembles this variety very much in its production. For cloth house growing, it is a top notch variety — easily grown and consistently dependable. In our opinion, Gold Coast is a "must" for early shading. Price \$70.00 per 1000.

LAKME

A glistening small white pompon that matures normally November 12. It posesses a hard, durable, formal flower that easily satisfies the most critical demands for keeping and shipping quality. Its trim smart appearance is enhanced by a chartreuse eye. The habit of growth is free, wiry, and the dark, rigid stems develop a very productive compound spray. In growth habit and cultural requirements it very closely resembles the variety Cassandra. Its black cloth response is rapid and just nicely follows Pinocchio in the shading program. It lends itself well to out-of-season flowering and has been outstanding in the Cornell trials. High uniform production and the height of quality in its floral make-up assure Lakme a position of eminence in any list of early profitable white pompons. Price \$90.00 per 1000.



Novelty Chrysanthemum's

SUNKIST

Here is an intense golden yellow single that flowers with Vibrant, December 20. Good for late planting along with Vibrant, Yukon, and Rosalind. The same ground bed culture you may be using for them, suits Sunkist also. It has responded very satisfactorily in preliminary trials when lighted for delayed flowering. Easy, dependable, and a golden daisy that fills a real demand at Christmas time. Price \$90.00 per 1000.

RED RUST

Vivid. Exquisite. Scintillating. All this and more could be said about the color of this new, well rounded, large pompon that blooms November 5. We will try to explain the shade by asking you to picture a beautiful blend of orange, red, and chrome bronze similar to Natoma. The habit of growth is clean, uniform and vigorous — making a variety easier to grow than Natoma. The sprays are well branched, giving a heavier production than Navaho. Red Rust DOES NOT SHADE and should be grown for its natural season only because its color is sensitive to the intense light of earlier shading periods. Price \$90.00 per 1000.

DEBONAIR

A decorative pompon of rich crimson red for December 5 normally. This is the top honor seedling of the 1945 National Chrysanthemum show in Cleveland. If lighted for the Christmas season, it should command premium prices, as we need not dwell upon the demand for a symmetrical velvety red at that time. Moderate temperatures, optimum light intensity and other environmental conditions which promote a firm wood and gradual elongation of stem and spray best suit this variety. A vigorous and healthy pompon you will be glad to have. Be sure to include Debonair in your 1947 plantings. Price \$90.00 per 1000.





Novelty Chrysanthemums





OMEGA

Omega is the best deep lemon yellow pompon to follow Sunny-side, maturing December 10. The formal flower possesses unusual substance and keeping qualities. Growth is strong, foliage dark and glossy, and the whole spray rigid and wiry. May we assure you that no blindness has been apparent and all tests indicate a high degree of resistance to verticillium. On ground beds with late planting and lights, Omega comes in nicely for Christmas. It can also be easily had for February flowering with lights. Price \$90.00 per 1000.

BROCADE

A very easily grown lively cameo pink daisy, flowering November 15. Brocade blooms same date as Masterpiece, and it resembles this variety in addition by responding to shading in the same way. As a mid-season pink, Brocade fills the gap in a good single between October Pink and W. H. Buckingham and the later variety, Valencia. Medium to tall in height the strong stems develop big, well branched sprays. Production is therefore high. A much needed variety for its season. Price \$90.00 per 1000.

DARK PINK ORCHID QUEEN

A sport of Orchid Queen of intense mauve pink much deeper than the parent. The sport shows many new and important qualities. The flower is larger and more fully rounded. Added vigor gives a stronger and taller stem than in the original. But most important of all, DARK PINK ORCHID QUEEN can be shaded for early flowering much more satisfactorily than Orchid Queen. A promising addition to your list of good standards. Price \$90.00 per 1000.

NOVELTY CHRYSANTHEMUMS



Novelty Chrysanthemums

HARVESTER

An intense canary yellow standard that blooms for Thanksgiving. The flower is of medium size, hard and durable, its bright, lustrous color; its wax-like petals and its very attractive semi-incurved form give this variety an appearance of substance and freshness that commands immediate attention. The foliage is attractive and healthy and is carried right up to the base of the flower. The stems are medium in size, strong and rigid. Harvester is a good shipper and is well liked by the retail trade. We recommend this variety to all growers as an easily grown bright yellow standard for the Thanksgiving season. Price \$90.00 per 1000.

REVELATION

All florists both wholesale and retail are conscious of the need for quality flowers that can be produced in quantity for the January market. Revelation fills this need. It is a clear white pompon that blooms as late as or later than Snow. It has never been known to go blind. Revelation makes possible the easy production of high quality white pompons during Christmas and early January without loss of production. Price \$50.00 per 1000.

SUNNYSIDE

A persistent demand from all wholesale growers calls for a round, hard flower that will ship and handle without bruising or other damages. Sunnyside exactly fills this demand. It is a strong grower and will consistently produce a heavy crop of well branched sprays that are easy to bunch. The quality of the flower is equal or better than any existing yellow pompon. The color is a clear brilliant yellow. It matures for Thanksgiving and later. **Price \$50.00** per 1000.

VESPER

Vesper is a white pompon that blooms normally November 10. The flower is very pure in color and has unusually good substance. Free growth, easy culture, and a well branched spray ranks Vesper with the best of the early dependable varieties now in use. This unique combination of flower quality and free growth habit plus its favorable response to black cloth treatment should make this variety very popular. **Price \$50.00** per 1000.



Novelty Chrysanthemums

PINOCCHIO

A glistening white button for early cloth house shading. It responds beautifully to black cloth treatment and for this reason we believe it will fill the insistent demand for a small white pompon that can be easily shaded into late August and early September maturity. The flower is a beautifully formed tightly quilled button of lively and dainty appearance. It is of hard substance and has good keeping and shipping qualities. The color is a clear sparkling white. The growth is vigorous, taller than Irene and requires less time between pinching and shading to form a fuller spray of flowers. Bunches of Pinocchio appear smarter than Irene because the spray formation is more nearly single planed; and fresher because of the more uniform opening of its flowers. Price \$90.00 per 1000.



Medium sized clear yellow pompon that blooms normally the end of November. The flowers are produced on well spaced sprays and are of close compact form with very good substance. It combines good quality with good production and disease resistance. Good results are obtained either in ground or raised benches. It will not produce blind growth so common in late varieties. Maturing the latter part of November, Golden Emblem will be found to be a welcome addition to yellow pompons in that season where quality and easy growth is combined with good production. **Price \$90.00** per 1000.

MATCHLESS

Judged by present day standards this variety by all odds seems to be the best white pompon introduced to date. Matchless possesses large solid blooms of great substance. These are well placed on strong sprays. Stems are of ample length and are clean, straight and rigid. Its growth is very free and robust with beautiful light green luxuriant foliage. The variety breaks freely from pinches and produces well under nearly all conditions, the production being very good either in ground or raised benches. Normal blooming date November 20th to 22nd, making it ideal for Thanksgiving. Matchless shades well and for this purpose should be an excellent variety to follow Bushnell and similar varieties. We can recommend Matchless as a productive and an easily grown variety that responds well to nearly all types of cultural conditions. Awarded gold medal 1943. Price \$90.00 per 1000.









Novelty Chrysanthemums

NEW VARIETIES OF A FEW YEARS AGO. DON'T FAIL TO ADD THESE TO YOUR LIST.

BARCAROLE

An entense golden yellow pompon that blooms normally November 5. The habit of growth is outstanding vigorous. It is of extremely easy culture and its good foliage and high production make it a good variety.

Above Varieties \$90.00 per 1000.

YELLOW CAMEO

A deep lemon yellow sport from Cameo. The form and growth habit are identical with the parent variety. Because of the popularity of Cameo, this attractive yellow counterpart should be a very valuable variety for early December flowering.

BRONZE GOLDSMITH

A beautifully blended orange and Brazil red sport from Goldsmith. Carefully grown Bronze Goldsmith can be one of the outstanding bronze pompons for late November flowering.

A high quality single that matures November 10. The color, a brilliant orange bronze holds well with full maturity, allowing an excellent period for marketing.

SYLVANNA

Above Varieties \$70.00 per 1000.

CASSANDRA

A bright orange bronze pompon that is a distinct advance in color for its season of November 10. It has fully rounded form and good substance. Cassandra has proven an excellent variety for cloth house shade.

NAVAHO

A medium-sized deep crimson, decorative pompon which changes to a reddish bronze under early shading. It responds well to black cloth and fills a great need for a cloth house variety in its color range.

PIXIE

A small well-rounded pompon somewhat larger than Nuggets. The color improves that variety in that it is much brighter and therefore more attractive. It is a remarkably good shipper. It responds beautifully to cloth house practice. It blooms normally November 10.

SEAFOAM

A white, medium sized pompon with a full center and well-rounded form, that blooms November 20. The flower resembles Bushnell. It responds satisfactorily to cloth house practices when grouped with the later varieties.

Above Varieties \$50.00 per 1000.

JEAN ELIZABETH

This white sport from Orchid Queen is a variety that responds very well to delayed flowering culture. Heavy grower with true incurved bloom. It is not sensitive to cultural environment. High quality flower maturing November 12.

INDIANAPOLIS YELLOW

This lemon yellow sport from Indianapolis Pink is another valuable addition to the very popular Indianapolis family. We think this is the best yellow mum for its specific flowering date. This variety has been re-selected so that it will stay true to color.

Above Varieties \$40.00 per 1000.

New Gardan Varieties

AVIATOR

A rich coppery red pompon maturing October 10. A vigorous and easy grower.

ALLEGRO

A glowing shrimp-pink suffused with coppery salmon pompon. One of the finest varieties for cutting, maturing October 15.

MORNING STAR

Extremely early flowering cream yellow, blooming from September until killing frost. A dwarf vigorous grower.

MORNING GLOW

A lovely early flowering lavender-mauve-pink. A most desirable color for September.

Above Varieties \$90.00 per 1000.

Rooted



Large Flowering Varieties

YELLOW

	Last		Select		Price
Name and Description	Pinch	Height	Bud	Matures	Per 1000
Gold Lode. Light golden yellow. Reflexed Golden October. Deep lemon yellow. Incurved.	July 5	Med. Med.	Aug. 25	Oct. 1 Oct. 10	\$40.00 40.00
Celestra. Lemon yellow. Incurved	July 5	Med.	Aug. 25 Ter. Bud	Oct. 15	40.00
Mrs. H. E. Kidder. Deep lemon yellow. Incurved	July 12	Med.	Aug. 25	Oct. 20	40.00
Yellow Ambassador. Lemon yellow. Incurved	July 12	Med.	Ter. Bud	Oct. 23	40.00
Blazing Gold. Deep golden ye'llow. Incurved	July 12	Med.	Ter. Bud	Oct. 25	40.00
Sunglow. Golden Yellow. Incurved	July 12	Med.	Aug. 25	Oct. 25	40.00
Citronella. Light buff yellow. Incurved Golden Glory. Golden yellow. Semi-incurved	July 12 July 16	Short Short	Aug. 31 Aug. 25	Oct. 28 Nov. 1	40.00 40.00
Good News. Deep lemon yellow. Incurved	July 16	Med.	Aug. 30	Nov. I	40.00
Yellow Turner. Light yellow. Incurved	July 16	Med.	Aug. 30	Nov. 5	40.00
Indianapolis Yellow. Lemon yellow. Incurved	July 19	Med.	Ter. Bud	Nov. 8	40.00
Cardonia. Deep golden yellow. Incurved	July 19	Med.	Sept. 5	Nov. 10	40.00
Penrod. Golden yellow. Incurved	July 19	Med. Med.	Ter. Bud	Nov. 10	40.00 40.00
Whittier. Lemon yellow. Incurved Yellow Monument. Lemon yellow. Incurved	July 19 July 22	Med.	Sept. 15 Sept. 10	Nov. 13 Nov. 15	40.00
Yellow Mefo. Lemon yellow. Incurved	July 25	Med.	Sept. 20	Nov. 20	40.00
Friendly Rival. Deep chrome yellow. Incurved	July 25	Med.	Sept. 10	Nov. 20	40.00
Marie DePetris. Deep golden yellow. Incurved.	July 25	Short	Sept. 15	Nov. 23	40.00
Harvester. Deep canary yellow. Incurved	July 28	Med. Med.	Sept. 30	Nov. 25 Nov. 25	90.00 40.00
Sun Gold. Lemon yellow. Semi-Incurved Golden Pearson. Golden yellow. Incurved	July 28 July 28	Med.	Sept. 30 Sept. 30	Nov. 25	40.00
Improved Yellow Chattanooga. Incurved	July 28	Med.	Sept. 20	Nov. 25	40.00
Golden Mrs. Ross. Golden yellow. Incurved	July 31	Tall	Ter. Bud	Dec. 3	40.00
Golden Mistletoe. Pale golden yellow. Incurved	Aug. 4	Med.	Sept. 30	Dec. 10	40.00
Meteore. Lemon yellow. Incurved	Aug. 4	Med.	ler. Bud	Dec. 10	70.00
Semi-incurved		Short	Sept. 30	Dec. 15	40.00
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W	HITE				
C att E I Wha		T 11		0	
Smith's Early White. Incurved	July I	Tall Med.	Aug. 10	Oct. 5	40.00
Silver Sheen. Incurved	July 5 July 12	Med.	Aug. 25 Aug. 30	Oct. 15 Oct. 18	40.00 40.00
Christina. Incurved	July 12	Short	Aug. 25	Oct. 20	40.00
	July 12	Med.	Ter. Bud	Oct. 23	40.00
Snow White. Incurved		Med.	Ter. Bud	Nov. I	40.00
Betsy Ross. Ivory white. Incurved		Tall Med.	Aug. 25	Nov. I	40.00 40.00
William Turner. White, Incurved		Med.	Aug. 30 Ter. Bud	Nov. 5 Nov. 8	40.00
Jean Elizabeth. Incurved		Med.	Ter. Bud	Nov. 12	40.00
Monument. Ivory white. Incurved	July 22	Med.	Sept. 10	Nov. 15	40.00
Marketeer. Incurved		Med.	Ter. Bud	Nov. 18	40.00
Mefo. Ivory white. Incurved	July 25	Med. Short	Sept. 20	Nov. 20 Nov. 25	40.00 40.00
White Frick. White suffused with pink. Incurved Chattanooga. Incurved	July 28	Med.	Sept. 10 Sept. 20	Nov. 25	40.00
December Glory. Ivory white, Incurved	July 31	Tall	Sept. 30	Dec. 1	40.00
December White. Incurved		Med.	Ter. Bud	Dec. 5	70.00
Improved December Beauty. Incurved	Aug. 4	Med.	Oct. I	Dec. 8	40.00
White Mistletoe. Incurved	Aug. 4 Aug. 4	Med. Med.	Sept. 30 Sept. 30	Dec. 10	40.00 90.00
Smith's Late White. Ivory white. Semi-incurved	-	Short	Sept. 30	Dec. 15	40.00



Large Flowering Varieties

BRONZE

Name and Description Indianola. Pale reddish bronze. Incurved Hilda Bergen. Dark reddish bronze. Incurved Alameda. Reddish bronze. Incurved Glitters. Deep reddish orange. Reflexed Apricot Queen. Orange bronze. Incurved Detroit News. Reddish bronze. Incurved Ivanhoe. Reddish bronze. Incurved Indianapolis Bronze. Buff bronze. Incurved Anaconda. Coppery bronze. Incurved Bronze Orchid Queen. Apricot buff. Incurved Gladys Pearson. Light buff bronze. Incurved Oak Leaf. Reddish bronze. Incurved Bronze Frick. Light bronze. Incurved Bronze Mistletoe. Buff bronze. Incurved Bronze Mistletoe. Buff bronze. Incurved	July 12 July 12 July 16 July 16 July 16 July 19 July 19 July 19 July 28 July 28 July 28 July 28 Aug. 4	Height Med. Med. Short Med. Med. Med. Med. Med. Med. Med. Med.	Select Bud Aug. 25 Aug. 25 Ter. Bud Ter. Bud Sept. 5 Aug. 30 Aug. 30 Ter. Bud Sept. 15 Ter. Bud Sept. 15 Ter. Bud Sept. 30 Sept. 30 Sept. 30 Sept. 30 Sept. 30	Matures Oct. 10 Oct. 25 Oct. 25 Oct. 28 Nov. 1 Nov. 1 Nov. 1 Nov. 8 Nov. 10 Nov. 12 Nov. 25 Nov. 25 Dec. 10	Rooted Price Per 1000 \$40.00 40.00 40.00 40.00 90.00 40.00 40.00 40.00 40.00 40.00
Early October. Light lavender. Semi-incurved. Pink Chief. Lavender. Incurved. Justrite. Light rose pink. Incurved. October Rose. Light lavender. Incurved. Major Ed. Bowes. Deep lavender. Incurved. Pink Turner. (Mrs. Leslie Davis). Lavender. Incurv. J. W. Prince. Rose pink. Incurved. Indianapolis Pink. Deep lavender. Incurved. Dark Pink Orchid Queen. Mauve Pink. Incurved. Orchid Queen. Orchid pink, Incurved. Thanksgiving Pink. Amaranth. Reflexed. Helen Frick. Rose pink. Incurved. Edwin Seidewitz. Lavender. Incurved. Pink Mistletoe. Lavender. Incurved.	July 5 July 5 July 5 July 12 July 16 July 16 July 19	Med. Tall Short Med. Med. Short Med. Med. Short Tall Med.	Ter. Bud Ter. Bud Sept. 5 Aug. 30 Aug. 30 Aug. 30 Ter. Bud Ter. Bud Ter. Bud Sept. 15 Sept. 10 Sept. 15 Sept. 30	Oct. 10 Oct. 15 Oct. 15 Oct. 15 Oct. 20 Nov. 5 Nov. 5 Nov. 8 Nov. 12 Nov. 12 Nov. 23 Nov. 25 Nov. 30 Nov. 10	70.00 40.00 40.00 40.00 40.00 40.00 40.00 90.00 40.00 40.00 40.00 40.00
Mrs. David F. Roy. Crimson. Incurved		Short Med.	Sept. 15 Sept. 20	Nov. 10 Nov. 18	40.00 40.00

HARVESTER

An intense canary yellow standard that blooms for Thanksgiving. The flower is of medium size, hard and durable, its bright, lustrous color; its wax-like petals and its semi-incurved form give this variety an appearance of substance and freshness. Harvester is an easy grower and well liked by the retail trade.

Price \$90.00 per 1000.

FOR CULTURAL POINTERS
SEE PAGES 1 to 10



Rooted

Gloeckner c

Pompon and Decorative Varieties

	Last		Size &		Price
Name and Description	Pinch	Height	Type	Matures	\$40.00
Yellow Irene. Light lemon yellow	July 8	Short Short	S. Pom. Int. Pom.	Oct. 18	40.00
Rodell Improved. Light lemon yellow	July 8			Oct. 20	40.00
Yellow Hammer. Golden yellow	July 8	Tall	Int. Pom.	Oct. 20	40.00
Golden Spray. Deep lemon yellow	July 12	Med.	Int. Pom.	Oct. 23 Oct. 25	70.00
Gold Coast, Golden yellow	July 12	Med.	Int. Pom.		40.00
*Golden Herald. Deep golden yellow	July 12	Med.	L. Dec.	Oct. 25	40.00
Yellow Dot. Yellow with bronze center	July 12	Med.	Int. Pom.	Oct. 25	40.00
Yellow Arcadia. Pernet yellow	July 16	Med.	Int. Pom.	Oct. 28	40.00
Mary Lennon Hall. Deep lemon yellow	July 16	Tall	Int. Pom.	Nov. I	40.00
Yellow Sea Gull. Pale lemon yellow	July 16	Tall	Int. Pom.	Nov. I	90.00
Barcarole. Golden yellow	July 19	Med.	Int. Pom.	Nov. 5	40.00
Nuggets. Light lemon yellow	July 19	Short	S. Pom.	Nov. 5	
Yellow Bushnell. Pernet yellow	July 19	Tall	Int. Pom.	Nov. 8	40.00
Derigold. Deep golden yellow	July 19	Med.	Int. Pom.	Nov. 10	40.00
Pixie. Deep golden yellow	July 19	Med.	S. Pom.	Nov. 10	50.00
Princeton. Orange yellow	July 22	Med.	Int. Dec.	Nov. 15	40.00
Yellow Fellow. Deep lemon yellow	July 22	Med.	Int. Dec.	Nov. 15	40.00
Golden Surprise. Sulphur yellow	July 25	Med.	Int. Pom.	Nov. 18	50.00
Golden Emblem. Golden yellow	July 25	Med.	Int. Pom.	Nov. 20	90.00
Hasegawa Gold. Light golden yellow	July 25	Med.	Int. Pom.	Nov. 23	40.00
Sunnyside. Golden yellow	July 28	Med.	Int. Pom.	Nov. 25	50.00
*Goldsmith. Golden yellow	July 28	Med.	Int. Dec.	Nov. 25	40.00
Yellow Cordova. Lemon yellow	July 28	Med.	Int. Dec.	Nov. 30	40.00
Yellow Cameo. Deep lemon yellow	July 31	Med.	Int. Pom.	Dec. 5	90.00
Omega. Lemon yellow	Aug. 2	Med.	Int. Pom.	Dec. 10	90.00
December Gold. Deep golden yellow	Aug. 2	Med.	Int. Dec.	Dec. 15	40.00
*Vibrant. Deep lemon yellow	Aug. 4	Med.	Int. Dec.	Dec. 20	40.00
Yellow Snow. Deep lemon yellow	Aug. 10	Med.	Int. Pom.	Dec. 30	40.00
	~	Med.	Int. Pom.	Dec. 30	40.00
W	HITE				
W Uvalda. Cream white	HITE July 8	Med.	Int. Pom.	Oct. 10	40.00
Uvalda. Cream white	HITE July 8 July 8	Med. Short	Int. Pom. S. Pom.	Oct. 10 Oct. 15	40.00 40.00
Uvalda. Cream white	HITE July 8 July 8 July 8	Med. Short Med.	Int. Pom. S. Pom. L. Pom.	Oct. 10 Oct. 15 Oct. 15	40.00 40.00 40.00
Uvalda. Cream white White Jewell. White tinged with light lavender *Silver Ball. Irene.	July 8 July 8 July 8 July 8 July 8	Med. Short Med. Short	Int. Pom. S. Pom. L. Pom. S. Pom.	Oct. 10 Oct. 15 Oct. 15 Oct. 18	40.00 40.00 40.00 40.00
Uvalda. Cream white White Jewell. White tinged with light lavender *Silver Ball. Irene. Minong.	July 8 July 8 July 8 July 8 July 8 July 8 July 12	Med. Short Med. Short Med.	Int. Pom. S. Pom. L. Pom. S. Pom. S. Pom.	Oct. 10 Oct. 15 Oct. 15 Oct. 18 Oct. 20	40.00 40.00 40.00 40.00 40.00
Uvalda. Cream white White Jewell. White tinged with light lavender *Silver Ball. Irene. Minong. Pinocchio.	July 8 July 8 July 8 July 8 July 8 July 12 July 12	Med. Short Med. Short Med. Med.	Int. Pom. S. Pom. L. Pom. S. Pom. S. Pom. S. Pom.	Oct. 10 Oct. 15 Oct. 15 Oct. 18 Oct. 20 Oct. 25	40.00 40.00 40.00 40.00 40.00 90.00
Uvalda. Cream white White Jewell. White tinged with light lavender *Silver Ball. Irene. Minong. Pinocchio. Arcadia.	July 8 July 8 July 8 July 8 July 8 July 12 July 12 July 16	Med. Short Med. Short Med. Med. Med.	Int. Pom. S. Pom. L. Pom. S. Pom. S. Pom. S. Pom. Int. Pom.	Oct. 10 Oct. 15 Oct. 15 Oct. 18 Oct. 20 Oct. 25 Oct. 28	40.00 40.00 40.00 40.00 40.00 90.00 40.00
Uvalda. Cream white White Jewell. White tinged with light lavender *Silver Ball. Irene. Minong. Pinocchio. Arcadia. Sea Gull. Cream white	July 8 July 8 July 8 July 8 July 8 July 12 July 12 July 16 July 16 July 16	Med. Short Med. Short Med. Med. Tall	Int. Pom. S. Pom. L. Pom. S. Pom. S. Pom. Int. Pom. Int. Pom.	Oct. 10 Oct. 15 Oct. 15 Oct. 18 Oct. 20 Oct. 25 Oct. 28 Nov. 1	40.00 40.00 40.00 40.00 40.00 90.00 40.00 40.00
Uvalda. Cream white White Jewell. White tinged with light lavender *Silver Ball. Irene. Minong. Pinocchio. Arcadia. Sea Gull. Cream white *White Doty. Ivory white	July 8 July 8 July 8 July 8 July 8 July 12 July 12 July 16 July 16 July 16 July 16	Med. Short Med. Short Med. Med. Tall	Int. Pom. S. Pom. L. Pom. S. Pom. S. Pom. S. Pom. Int. Pom. Int. Pom. L. Pom.	Oct. 10 Oct. 15 Oct. 15 Oct. 18 Oct. 20 Oct. 25 Oct. 28 Nov. 1 Nov. 1	40.00 40.00 40.00 40.00 40.00 90.00 40.00 40.00
Uvalda. Cream white White Jewell. White tinged with light lavender *Silver Ball. Irene. Minong. Pinocchio. Arcadia. Sea Gull. Cream white *White Doty. Ivory white Crystal Jewell.	HITE July 8 July 8 July 8 July 8 July 12 July 12 July 16 July 16 July 16 July 16 July 19	Med. Short Med. Short Med. Med. Tall Tall	Int. Pom. S. Pom. L. Pom. S. Pom. S. Pom. Int. Pom. Int. Pom. L. Pom. S. Pom.	Oct. 10 Oct. 15 Oct. 15 Oct. 18 Oct. 20 Oct. 25 Oct. 28 Nov. 1 Nov. 1	40.00 40.00 40.00 40.00 40.00 40.00 40.00 40.00 40.00
Uvalda. Cream white White Jewell. White tinged with light lavender *Silver Ball. Irene. Minong. Pinocchio. Arcadia. Sea Gull. Cream white *White Doty. Ivory white. Crystal Jewell. Rev. Horace Bushnell. Cream white	HITE July 8 July 8 July 8 July 8 July 12 July 12 July 16 July 16 July 16 July 16 July 19 July 19	Med. Short Med. Short Med. Med. Tall Tall Tall	Int. Pom. S. Pom. L. Pom. S. Pom. S. Pom. Int. Pom. Int. Pom. L. Pom. Int. Pom. Int. Pom.	Oct. 10 Oct. 15 Oct. 15 Oct. 18 Oct. 20 Oct. 25 Oct. 28 Nov. 1 Nov. 1 Nov. 8	40.00 40.00 40.00 40.00 90.00 40.00 40.00 40.00 40.00 40.00
Uvalda. Cream white White Jewell. White tinged with light lavender *Silver Ball. Irene. Minong. Pinocchio. Arcadia. Sea Gull. Cream white *White Doty. Ivory white Crystal Jewell. Rev. Horace Bushnell. Cream white Vesper.	July 8 July 8 July 8 July 8 July 12 July 12 July 16 July 16 July 16 July 16 July 19 July 19 July 19	Med. Short Med. Short Med. Med. Tall Tall Tall	Int. Pom. S. Pom. L. Pom. S. Pom. S. Pom. Int. Pom. Int. Pom. L. Pom. Int. Pom. Int. Pom.	Oct. 10 Oct. 15 Oct. 15 Oct. 18 Oct. 20 Oct. 25 Oct. 28 Nov. 1 Nov. 1 Nov. 8 Nov. 8 Nov. 10	40.00 40.00 40.00 40.00 90.00 40.00 40.00 40.00 40.00 40.00 50.00
Uvalda. Cream white White Jewell. White tinged with light lavender *Silver Ball. Irene. Minong. Pinocchio. Arcadia. Sea Gull. Cream white *White Doty. Ivory white Crystal Jewell. Rev. Horace Bushnell. Cream white Vesper. Lakme.	July 8 July 8 July 8 July 8 July 12 July 12 July 16 July 16 July 16 July 16 July 19 July 19 July 19 July 22	Med. Short Med. Short Med. Med. Tall Tall Tall Tall Tall Med.	Int. Pom. S. Pom. L. Pom. S. Pom. S. Pom. Int. Pom. Int. Pom. L. Pom. Int. Pom. Int. Pom. Int. Pom. Int. Pom.	Oct. 10 Oct. 15 Oct. 15 Oct. 18 Oct. 20 Oct. 25 Oct. 28 Nov. 1 Nov. 1 Nov. 8 Nov. 8 Nov. 10 Nov. 12	40.00 40.00 40.00 40.00 90.00 40.00 40.00 40.00 40.00 50.00 90.00
Uvalda. Cream white White Jewell. White tinged with light lavender *Silver Ball. Irene. Minong. Pinocchio. Arcadia. Sea Gull. Cream white *White Doty. Ivory white Crystal Jewell. Rev. Horace Bushnell. Cream white Vesper. Lakme. Chicago Pearl. Ivory white	July 8 July 8 July 8 July 8 July 12 July 12 July 16 July 16 July 16 July 19 July 19 July 19 July 22 July 22 July 22	Med. Short Med. Short Med. Med. Tall Tall Tall Tall Tall Med. Med. Med.	Int. Pom. S. Pom. L. Pom. S. Pom. S. Pom. Int. Pom. Int. Pom. L. Pom. Int. Pom.	Oct. 10 Oct. 15 Oct. 15 Oct. 18 Oct. 20 Oct. 25 Oct. 28 Nov. 1 Nov. 1 Nov. 8 Nov. 8 Nov. 10 Nov. 12 Nov. 15	40.00 40.00 40.00 40.00 90.00 40.00 40.00 40.00 40.00 50.00 90.00 40.00
Uvalda. Cream white White Jewell. White tinged with light lavender *Silver Ball. Irene. Minong. Pinocchio. Arcadia. Sea Gull. Cream white *White Doty. Ivory white Crystal Jewell. Rev. Horace Bushnell. Cream white Vesper. Lakme. Chicago Pearl. Ivory white Matchless.	July 8 July 8 July 8 July 8 July 12 July 12 July 16 July 16 July 16 July 19 July 19 July 19 July 19 July 22 July 25	Med. Short Med. Short Med. Med. Tall Tall Tall Tall Tall Med. Med. Med. Med.	Int. Pom. S. Pom. L. Pom. S. Pom. S. Pom. Int. Pom.	Oct. 10 Oct. 15 Oct. 15 Oct. 18 Oct. 20 Oct. 25 Oct. 28 Nov. 1 Nov. 1 Nov. 8 Nov. 8 Nov. 10 Nov. 12 Nov. 15 Nov. 20	40.00 40.00 40.00 40.00 90.00 40.00 40.00 40.00 40.00 50.00 90.00 90.00
Uvalda. Cream white White Jewell. White tinged with light lavender *Silver Ball. Irene. Minong. Pinocchio. Arcadia. Sea Gull. Cream white *White Doty. Ivory white Crystal Jewell. Rev. Horace Bushnell. Cream white Vesper. Lakme. Chicago Pearl. Ivory white Matchless. Pearl.	HITE July 8 July 8 July 8 July 12 July 12 July 16 July 16 July 16 July 19 July 19 July 19 July 22 July 25 July 25 July 25	Med. Short Med. Short Med. Med. Tall Tall Tall Tall Tall Med. Med. Med. Tall	Int. Pom. S. Pom. L. Pom. S. Pom. S. Pom. Int. Pom.	Oct. 10 Oct. 15 Oct. 15 Oct. 18 Oct. 20 Oct. 25 Oct. 28 Nov. 1 Nov. 1 Nov. 8 Nov. 8 Nov. 10 Nov. 12 Nov. 12 Nov. 15 Nov. 20 Nov. 20	40.00 40.00 40.00 40.00 90.00 40.00 40.00 40.00 40.00 90.00 90.00 40.00 90.00
Uvalda. Cream white White Jewell. White tinged with light lavender *Silver Ball. Irene. Minong. Pinocchio. Arcadia. Sea Gull. Cream white *White Doty. Ivory white Crystal Jewell. Rev. Horace Bushnell. Cream white Vesper. Lakme. Chicago Pearl. Ivory white Matchless. Pearl. Seafoam.	July 8 July 8 July 8 July 8 July 12 July 12 July 16 July 16 July 16 July 19 July 19 July 19 July 22 July 25 July 25 July 25 July 25 July 25 July 25	Med. Short Med. Short Med. Med. Tall Tall Tall Tall Tall Med. Med. Med. Tall Med. Med.	Int. Pom. S. Pom. L. Pom. S. Pom. S. Pom. Int. Pom.	Oct. 10 Oct. 15 Oct. 15 Oct. 18 Oct. 20 Oct. 25 Oct. 28 Nov. 1 Nov. 1 Nov. 8 Nov. 8 Nov. 10 Nov. 12 Nov. 12 Nov. 15 Nov. 20 Nov. 20 Nov. 20	40.00 40.00 40.00 40.00 90.00 40.00 40.00 40.00 50.00 90.00 40.00 90.00 40.00 50.00
Uvalda. Cream white White Jewell. White tinged with light lavender *Silver Ball. Irene. Minong. Pinocchio. Arcadia. Sea Gull. Cream white *White Doty. Ivory white Crystal Jewell. Rev. Horace Bushnell. Cream white Vesper. Lakme. Chicago Pearl. Ivory white Matchless. Pearl. Seafoam. Priscilla.	HITE July 8 July 8 July 8 July 8 July 12 July 12 July 16 July 16 July 16 July 19 July 19 July 19 July 22 July 22 July 25 July 25 July 25 July 25 July 28	Med. Short Med. Short Med. Med. Tall Tall Tall Tall Tall Med. Med. Med. Tall Med. Tall	Int. Pom. S. Pom. L. Pom. S. Pom. S. Pom. Int. Pom.	Oct. 10 Oct. 15 Oct. 15 Oct. 18 Oct. 20 Oct. 25 Oct. 28 Nov. 1 Nov. 1 Nov. 8 Nov. 8 Nov. 10 Nov. 12 Nov. 12 Nov. 15 Nov. 20 Nov. 20 Nov. 20 Nov. 28	40.00 40.00 40.00 40.00 90.00 40.00 40.00 40.00 50.00 90.00 40.00 50.00 70.00
Uvalda. Cream white White Jewell. White tinged with light lavender *Silver Ball. Irene. Minong. Pinocchio. Arcadia. Sea Gull. Cream white *White Doty. Ivory white Crystal Jewell. Rev. Horace Bushnell. Cream white Vesper. Lakme. Chicago Pearl. Ivory white Matchless. Pearl. Seafoam. Priscilla. *White Yuletide.	July 8 July 8 July 8 July 8 July 8 July 12 July 16 July 16 July 16 July 19 July 19 July 19 July 22 July 22 July 25 July 25 July 25 July 28 July 28	Med. Short Med. Short Med. Med. Tall Tall Tall Tall Med. Med. Tall Med. Tall Med. Tall Short	Int. Pom. S. Pom. L. Pom. S. Pom. S. Pom. Int. Pom.	Oct. 10 Oct. 15 Oct. 15 Oct. 18 Oct. 20 Oct. 25 Oct. 28 Nov. 1 Nov. 8 Nov. 8 Nov. 8 Nov. 10 Nov. 12 Nov. 12 Nov. 15 Nov. 20 Nov. 20 Nov. 20 Nov. 28 Nov. 28	40.00 40.00 40.00 40.00 90.00 40.00 40.00 40.00 50.00 90.00 40.00 50.00 70.00 40.00
Uvalda. Cream white White Jewell. White tinged with light lavender *Silver Ball. Irene. Minong. Pinocchio. Arcadia. Sea Gull. Cream white *White Doty. Ivory white Crystal Jewell. Rev. Horace Bushnell. Cream white Vesper. Lakme. Chicago Pearl. Ivory white Matchless. Pearl. Seafoam. Priscilla. *White Yuletide. Cordova. Cream white	July 8 July 8 July 8 July 8 July 8 July 12 July 16 July 16 July 16 July 19 July 19 July 19 July 22 July 22 July 25 July 25 July 25 July 25 July 28 July 28 July 28 July 28	Med. Short Med. Short Med. Med. Tall Tall Tall Tall Med. Med. Tall Med. Tall Med. Med. Tall Med. Med. Med. Tall Med. Med. Tall	Int. Pom. S. Pom. L. Pom. S. Pom. S. Pom. Int. Pom.	Oct. 10 Oct. 15 Oct. 15 Oct. 18 Oct. 20 Oct. 25 Oct. 28 Nov. 1 Nov. 1 Nov. 8 Nov. 8 Nov. 10 Nov. 12 Nov. 15 Nov. 20 Nov. 20 Nov. 20 Nov. 28 Nov. 28 Nov. 30	40.00 40.00 40.00 40.00 90.00 40.00 40.00 40.00 50.00 90.00 40.00 50.00 70.00 40.00
Uvalda. Cream white White Jewell. White tinged with light lavender *Silver Ball. Irene. Minong. Pinocchio. Arcadia. Sea Gull. Cream white *White Doty. Ivory white Crystal Jewell. Rev. Horace Bushnell. Cream white Vesper. Lakme. Chicago Pearl. Ivory white Matchless. Pearl. Seafoam. Priscilla. *White Yuletide. Cordova. Cream white Royal Queen.	July 8 July 8 July 8 July 8 July 12 July 16 July 16 July 16 July 19 July 19 July 19 July 22 July 22 July 25 July 25 July 25 July 25 July 28 July 28 July 31	Med. Short Med. Short Med. Med. Tall Tall Tall Tall Med. Med. Tall Med. Med. Tall Med. Med. Med. Tall Short Med. Med.	Int. Pom. S. Pom. L. Pom. S. Pom. S. Pom. Int. Pom.	Oct. 10 Oct. 15 Oct. 15 Oct. 18 Oct. 20 Oct. 25 Oct. 28 Nov. 1 Nov. 8 Nov. 8 Nov. 10 Nov. 12 Nov. 12 Nov. 15 Nov. 20 Nov. 20 Nov. 20 Nov. 28 Nov. 28 Nov. 30 Dec. 5	40.00 40.00 40.00 40.00 90.00 40.00 40.00 40.00 50.00 90.00 40.00 50.00 70.00 40.00 40.00 40.00
Uvalda. Cream white White Jewell. White tinged with light lavender *Silver Ball. Irene. Minong. Pinocchio. Arcadia. Sea Gull. Cream white *White Doty. Ivory white Crystal Jewell. Rev. Horace Bushnell. Cream white Vesper. Lakme. Chicago Pearl. Ivory white Matchless. Pearl. Seafoam. Priscilla. *White Yuletide. Cordova. Cream white Royal Queen. Cameo. Ivory white	July 8 July 8 July 8 July 8 July 12 July 16 July 16 July 16 July 19 July 19 July 19 July 22 July 22 July 25 July 25 July 25 July 25 July 25 July 28 July 28 July 31 July 31	Med. Short Med. Short Med. Med. Tall Tall Tall Tall Med. Med. Tall Med. Med. Med. Tall Med. Med. Med. Med. Med. Med. Med. Med.	Int. Pom. S. Pom. L. Pom. S. Pom. S. Pom. Int. Pom.	Oct. 10 Oct. 15 Oct. 15 Oct. 18 Oct. 20 Oct. 25 Oct. 28 Nov. 1 Nov. 8 Nov. 8 Nov. 10 Nov. 12 Nov. 15 Nov. 20 Nov. 20 Nov. 20 Nov. 20 Nov. 28 Nov. 28 Nov. 30 Dec. 5 Dec. 5	40.00 40.00 40.00 40.00 90.00 40.00 40.00 40.00 40.00 90.00 40.00 90.00 40.00 40.00 40.00 40.00 40.00
Uvalda. Cream white White Jewell. White tinged with light lavender *Silver Ball. Irene. Minong. Pinocchio. Arcadia. Sea Gull. Cream white *White Doty. Ivory white Crystal Jewell. Rev. Horace Bushnell. Cream white Vesper. Lakme. Chicago Pearl. Ivory white Matchless. Pearl. Seafoam. Priscilla. *White Yuletide. Cordova. Cream white Royal Queen. Cameo. Ivory white December Glory. Ivory white	July 8 July 8 July 8 July 8 July 12 July 16 July 16 July 16 July 19 July 19 July 22 July 22 July 25 July 25 July 25 July 25 July 28 July 28 July 31 July 31 Aug. 6	Med. Short Med. Short Med. Med. Med. Tall Tall Tall Med. Med. Med. Tall Med. Med. Med. Med. Med. Med. Med. Med.	Int. Pom. S. Pom. L. Pom. S. Pom. S. Pom. Int. Dec. Int. Dec. Int. Pom. Int. Dec.	Oct. 10 Oct. 15 Oct. 15 Oct. 18 Oct. 20 Oct. 25 Oct. 28 Nov. 1 Nov. 8 Nov. 8 Nov. 10 Nov. 12 Nov. 15 Nov. 20 Nov. 30 Dec. 5 Dec. 5 Dec. 15	40.00 40.00 40.00 40.00 90.00 40.00 40.00 40.00 50.00 90.00 40.00 50.00 70.00 40.00 40.00 40.00 40.00 40.00
Uvalda. Cream white White Jewell. White tinged with light lavender *Silver Ball. Irene. Minong. Pinocchio. Arcadia. Sea Gull. Cream white *White Doty. Ivory white Crystal Jewell. Rev. Horace Bushnell. Cream white Vesper. Lakme. Chicago Pearl. Ivory white Matchless. Pearl. Seafoam. Priscilla. *White Yuletide. Cordova. Cream white Royal Queen. Cameo. Ivory white December Glory. Ivory white Ivory Snow. Ivory yellow	July 8 July 8 July 8 July 8 July 12 July 16 July 16 July 16 July 19 July 19 July 22 July 22 July 25 July 25 July 25 July 25 July 25 July 25 July 28 July 28 July 31 July 31 Aug. 6 Aug. 10	Med. Short Med. Short Med. Med. Tall Tall Tall Tall Med. Med. Tall Med. Med. Med. Med. Med. Med. Med. Med.	Int. Pom. S. Pom. L. Pom. S. Pom. S. Pom. Int. Pom.	Oct. 10 Oct. 15 Oct. 15 Oct. 15 Oct. 18 Oct. 20 Oct. 25 Oct. 28 Nov. 1 Nov. 8 Nov. 8 Nov. 10 Nov. 12 Nov. 15 Nov. 20 Nov. 20 Nov. 20 Nov. 20 Nov. 28 Nov. 20 Nov. 28 Nov. 30 Dec. 5 Dec. 5 Dec. 30	40.00 40.00 40.00 40.00 90.00 40.00 40.00 40.00 50.00 90.00 40.00 50.00 70.00 40.00 40.00 40.00 40.00 40.00
Uvalda. Cream white White Jewell. White tinged with light lavender *Silver Ball. Irene. Minong. Pinocchio. Arcadia. Sea Gull. Cream white *White Doty. Ivory white. Crystal Jewell. Rev. Horace Bushnell. Cream white Vesper. Lakme. Chicago Pearl. Ivory white Matchless. Pearl. Seafoam. Priscilla. *White Yuletide. Cordova. Cream white Royal Queen. Cameo. Ivory white December Glory. Ivory white Ivory Snow. Ivory yellow Snow. Ivory white	HITE July 8 July 8 July 8 July 12 July 16 July 16 July 16 July 19 July 19 July 19 July 22 July 22 July 25 July 25 July 25 July 25 July 25 July 28 July 28 July 28 July 31 July 31 Aug. 6 Aug. 10 Aug. 10	Med. Short Med. Short Med. Med. Tall Tall Tall Tall Med. Med. Med. Tall Short Med. Med. Med. Med. Med. Med. Med. Med.	Int. Pom. S. Pom. L. Pom. S. Pom. S. Pom. Int. Pom.	Oct. 10 Oct. 15 Oct. 15 Oct. 18 Oct. 20 Oct. 25 Oct. 28 Nov. 1 Nov. 8 Nov. 8 Nov. 10 Nov. 12 Nov. 15 Nov. 20 Nov. 20 Nov. 20 Nov. 20 Nov. 28 Nov. 20 Nov. 28 Nov. 30 Dec. 5 Dec. 5 Dec. 30 Dec. 30	40.00 40.00 40.00 40.00 90.00 40.00 40.00 40.00 50.00 90.00 40.00 50.00 70.00 40.00 40.00 40.00 40.00 40.00 40.00
Uvalda. Cream white White Jewell. White tinged with light lavender *Silver Ball. Irene. Minong. Pinocchio. Arcadia. Sea Gull. Cream white *White Doty. Ivory white Crystal Jewell. Rev. Horace Bushnell. Cream white Vesper. Lakme. Chicago Pearl. Ivory white Matchless. Pearl. Seafoam. Priscilla. *White Yuletide. Cordova. Cream white Royal Queen. Cameo. Ivory white December Glory. Ivory white Ivory Snow. Ivory yellow	HITE July 8 July 8 July 8 July 12 July 16 July 16 July 16 July 19 July 19 July 19 July 22 July 22 July 25 July 25 July 25 July 25 July 25 July 28 July 28 July 28 July 31 July 31 Aug. 6 Aug. 10 Aug. 10	Med. Short Med. Short Med. Med. Tall Tall Tall Tall Med. Med. Tall Med. Med. Med. Med. Med. Med. Med. Med.	Int. Pom. S. Pom. L. Pom. S. Pom. S. Pom. Int. Pom.	Oct. 10 Oct. 15 Oct. 15 Oct. 15 Oct. 18 Oct. 20 Oct. 25 Oct. 28 Nov. 1 Nov. 8 Nov. 8 Nov. 10 Nov. 12 Nov. 15 Nov. 20 Nov. 20 Nov. 20 Nov. 20 Nov. 28 Nov. 20 Nov. 28 Nov. 30 Dec. 5 Dec. 5 Dec. 30	40.00 40.00 40.00 40.00 90.00 40.00 40.00 40.00 50.00 90.00 40.00 50.00 70.00 40.00 40.00 40.00 40.00 40.00



Pompon and Decorative Varieties

BRONZE

	Last				Rooted
Roman Bronze. Bronze suffused with pink. Adelaide. Dark reddish bronze. *Jemima. Dark reddish bronze. Fire Bird. Dark reddish bronze. Red Rust. Reddish bronze. Bronze Bulkeley. Bronze suffused with pink. Cassandra. Orange bronze. New York. Reddish bronze. *Bronze Masterpiece. Apricot bronze. Catherine. Light reddish bronze. Legal Tender. Bronze and gold. *Bronze Goldsmith. Mars orange. Dorothy Turner. Deep reddish bronze.	July 12 July 12 July 12 July 12 July 19 July 19 July 19 July 22 July 22 July 22 July 25 July 25 July 28	Height Tall Med. Med. Med. Tall Med. Med. Med. Med. Med. Med. Med. Med.	Size & Type Int. Pom. S. Pom. Int. Dec. L. Pom. Int. Pom. Int. Pom. Int. Pom. Int. Pom. Int. Dec.	Matures Oct. 20 Oct. 23 Oct. 23 Oct. 25 Nov. 5 Nov. 8 Nov. 10 Nov. 13 Nov. 15 Nov. 20 Nov. 20 Nov. 25 Nov. 25	Price Per 1000 \$40.00 40.00 40.00 90.00 40.00 50.00 40.00 40.00 40.00 40.00 40.00 40.00
Jewell. Lavender Dark Pink Jewell. Deep lavender Caroline Yosick. Lavender Pink Pearl. Rose pink Capt. Cook. Deep rose pink Jessie. (Madeline). Light lavender Pink Dot. White with pink center Isobel. Light lavender *Lillian Doty. Light rose pink Dark Pink Bulkeley. Dark rose pink Mrs. Morgan G. Bulkeley. Light rose pink *Thyra. Lavender *Masterpiece. Tourmaline pink Uneeda. Lavender Usona. Lavender Prosperity. Deep lavender Riviera. Luminous pink Pink Treasure Island. Light lavender	July 8 July 8 July 8 July 12 July 12 July 12 July 16 July 16 July 19 July 19 July 19 July 22 July 28 July 28 Aug. 2 Aug. 2	Short Short Med. Med. Med. Med. Med. Med. Med. Med.	S. Pom. S. Pom. S. Dec. S. Pom. Int. Pom. Int. Pom. Int. Pom. L. Pom. Int. Dec. Int. Dec. Int. Dec.	Oct. 15 Oct. 15 Oct. 20 Oct. 20 Oct. 25 Oct. 25 Nov. 1 Nov. 8 Nov. 8 Nov. 10 Nov. 15 Nov. 25 Nov. 25 Dec. 10 Dec. 20	40.00 40.00 90.00 40.00 40.00 40.00 40.00 40.00 40.00 40.00 40.00 40.00 40.00 40.00 40.00
R	ED				
Natoma. Flame scarlet Robin Hood. Dark red Navaho. Dark red Red Princeton. Brazil red Royal Crimson. Dark crimson Cavalcade. Mandarin red Debonair. Crimson red	July 19 July 19 July 22 July 31 Aug. 2	Short Med. Med. Med. Med. Med. Med.	Int. Dec. S. Pom. Int. Dec. Int. Dec. L. Dec. Int. Pom. L. Pom.	Oct. 25 Nov. 5 Nov. 5 Nov. 15 Dec. 1 Dec. 10	40.00 40.00 50.00 40.00 40.00 40.00 90.00

^{*} Responds to disbudding.



Single-Daisy Type Varieties

YELLOW

Name and Description Yellow Daisy. Deep lemon yellow Lodestar. Golden yellow *Golden Jane. Brilliant golden yellow Sunkist.	Pinch July 16 July 28 July 28 Aug. 7	Height Med. Med. Med. Med.	Size Int. Int. Large Int.	Matures Nov. 1 Nov. 25 Nov. 30 Dec. 20	Rooted Price Per 1000 \$40.00 70.00 50.00 90.00
W	HITE				
*White Mensa. Ivory white	July 22 Aug. 7	Med. Tall	Int. Int.	Nov. 10 Dec. 10	40.00 40.00
BRO	ONZE				
October Bronze. Light bronze Bronze Daisy. Light bronze Bronze Buckingham. Light orange bronze Sylvanna. Bittersweet orange *Apricot Valencia. Deep apricot buff *Jane. Light buff bronze. Sport from Valencia.	July 16 July 16 July 16 July 22 July 28 July 28	Med. Med. Short Med. Med. Med.	Int. Int. Int. Int. Large Large	Oct. 28 Nov. 1 Nov. 3 Nov. 10 Nov. 30 Nov. 30	40.00 40.00 40.00 70.00 50.00 40.00
P	INK				
October Pink. Light lavender W. H. Buckingham. Rose pink Brocade. Cameo pink Hasegawa Pink. Lavender *Valencia. Orchid pink *Dark Pink Valencia. Deep orchid pink Rosalind. Rose pink	July 16 July 16 July 22 July 28 July 28 July 28 Aug. 7	Med. Short Med. Med. Med. Tall	Int. Int. Int. Int. Large Large Int.	Oct. 28 Nov. 3 Nov. 15 Nov. 25 Nov. 30 Nov. 30 Dec. 20	40.00 40.00 90.00 40.00 40.00 40.00
RED					
Red Daisy. Deep red Bittersweet. Bittersweet red *Europa. Cardinal red. *Red Melba. Light red *Carnelia. Bittersweet red Sarong. Crimson scarlet	July 19 July 19 July 22 July 22 July 28 Aug. 4	Med. Med. Short Short Short Med.	Int. Int. Large Large Large Int.	Nov. 5 Nov. 8 Nov. 10 Nov. 10 Nov. 30 Dec. 15	40.00 90.00 40.00 40.00 40.00 40.00

* Responds to disbudding.

Insecticides and Jungicides

Arsenate of Lead 4 lbs. \$1.00 — 24 lbs. \$4.50	Nicofume Pressure Fumigators.
Calcium Cyanide G. Fumigant.	1/2 lb. cans (12 cans) \$4.4
5 lbs. \$3.00 — 25 lbs. \$10.00	1 lb. cans (12 cans) \$7.4
	NNOR
Deenate 50 W (DDT) 4 lbs. \$3.20 — 25 lbs. \$18.75	No-Py-Ro
Du Pont Spreader Sticker. Gal \$4.95 — 5 gal. \$23.00	Optox
Evergreen	Red Arrow Special
Fermate	Sodium Selenate
	Tarter Emetic 10 lbs. \$8.50 — 100 lbs. \$75.0
Loro	Tobacco Dust
New Libersol	Thiocide
Nicofume LiquidGal. \$11.25 — 5 gal. \$45.75	Yamtox



Anemone Flowered Varieties

Name and Description *Helios. Deep golden yellow. Sunray. Light lemon yellow. *Yellow Freida. Lemon yellow. *Susanne Miller. Buff yellow. Sport from Norma *Yellow Rolinda. Light buff yellow. *Gleam. Deep lemon yellow. *Yellow Supreme. Buff yellow suffused with pink Yellow Garza Supreme. Pale lemon yellow	July 22 July 22 July 25 July 25 July 31 Aug. 2	Height Med. Med. Med. Tall Med. Tall Med. Short	Size Large Int. Large Int. Int. Large Int.	Matures Nov. 10 Nov. 10 Nov. 15 Nov. 18 Nov. 23 Dec. 5 Dec. 10 Dec. 15	Price Rooted Per 1000 \$40.00 40.00 40.00 40.00 40.00 40.00	
W	HITE					
Blanche. White Izola. *White Anemone. *Shasta. *Little America. *White Freida. White with yellow cushion. *White Norma. White suffused with pink. *Nevada. White with chartreuse green cushion. *Long Island Beauty. White with yellow cushion. *White Supreme. White suffused with pink. Garza Supreme.	July 19 July 19 July 19 July 22 July 25 July 28	Med. Short Tall Med. Med. Med. Tall Med. Med. Med. Short	Int. Int. Int. Int. Int. Large Large Int. Large Large	Nov. 1 Nov. 5 Nov. 8 Nov. 10 Nov. 15 Nov. 18 Nov. 20 Nov. 20 Dec. 10 Dec. 15	40.00 40.00 40.00 40.00 40.00 40.00 70.00 40.00 40.00 40.00	
B R	ONZE		4			
Bronze Izola. Reddish bronze Yolanda. Light orange bronze *Bronze Supreme. Light bronze suffused with pink	July 28	Short Med.	Int. Int. Large	Nov. 1 Nov. 25	40.00 40.00	
·			9-			
P	INK					
Pink Izola. Lavender Orchid Beauty. Orchid with golden cushion *Freida. Light lavender with yellow cushion *Norma. Orchid pink petals with salmon cushion *Dark Pink Norma. Deep lavender	July 22 July 22 July 25 July 25	Short Med. Med. Tall	Int. Int. Large Int. Int.	Nov. 15 Nov. 15 Nov. 15 Nov. 18	40.00 40.00 40.00 40.00 40.00	
*Beautiful Lady. Deep lavender rays with cream white cushion	July 28 July 31	Short Med. Med.	Large Large Large	Nov. 25 Dec. 5 Dec. 10	40.00 40.00 40.00	
R E D						
Red Izola. Deep red	July 16	Short	Int.	Nov. 1	40.00	
*The Titan. Scarlet crimson with bronzy red cushion	July 19	Med. Med.	Large Int.	Nov. 10 Nov. 23	40.00 40.00	
* Responds to disbudding.						



Pot Plant Varieties

Name and Description	Last Pinch	Туре	Spray or Disbud	Matures	Rooted Price Per 1000		
Early Yellow. Light golden yellow. Pomponette. Light buff yellow. Gold Lode. Golden yellow. Rodell Improved. Yellow. Sport from Rodell. Mrs. H. E. Kidder. Bright Yellow. Cincinnati. Golden yellow. Golden Spray. Deep lemon yellow. Blazing Gold. Deep golden yellow. Sunglow. Yellow. Golden Glory. Golden yellow. Indianapolis Yellow. Lemon yellow. Cardonia. Deep golden yellow. Yellow Beauty. Golden yellow. Yellow Fellow. Deep lemon yellow. Friendly Rival. Large golden yellow. Bonnatfor DeLuxe. Golden yellow. Marie De Petris. Deep golden yellow. Yellow Rolinda. Buff yellow. Sun Gold. Lemon yellow.	Aug. 24 Aug. 29 Aug. 29 Aug. 29 Sept. 3 Sept. 8 Sept. 8	S. Pom. Int. Pom L. F. Dec. Int. Pom. L. F. Inc. L. Pom. Int. Pom. L. F. Inc. L. F. Dec.	Spray Spray Disbud Spray Disbud Spray Disbud Disbud Spray Disbud Disbud Disbud	Sept. 15 Sept. 20 Oct. 1 Oct. 20 Oct. 20 Oct. 23 Oct. 25 Oct. 25 Nov. 1 Nov. 8 Nov. 10 Nov. 10 Nov. 15 Nov. 15 Nov. 20 Nov. 20 Nov. 23 Nov. 23 Nov. 25	\$40.00 40.00 40.00 40.00 40.00 40.00 40.00 40.00 40.00 40.00 40.00 40.00 40.00 40.00 40.00 40.00		
W	HITE						
White Jewell. White suffused with pink Irene. White Minong. White Christina. White, sport from Rose Chochard. Granite State. White White Izola. Snow White, Indianapolis White. White Richard Mandel. Pure white Little America. Pure white Marketeer. White Long Island Beauty. White with yellow cushion. White Frick. White suffused with pink.	Aug. 24 Aug. 29 Aug. 24 Aug. 29 Aug. 29 Aug. 29 Sept. 3 Sept. 3	S. Pom. S. Pom. S. Pom. L. F. Inc. L. Pom. Int. Anem. L. F. Inc. L. Pom, Int. Anem. L. F. Inc. L. Pom. L. F. Inc. L. F. Inc. L. F. Inc. L. F. Inc. L. Anem. L. F. Inc.	Spray Spray Spray Disbud Disbud Disbud Disbud Disbud Disbud Disbud Disbud	Oct. 15 Oct. 18 Oct. 20 Oct. 20 Oct. 25 Nov. 1 Nov. 1 Nov. 8 Nov. 10 Nov. 10 Nov. 18 Nov. 20 Nov. 25	40.00 40.00 40.00 90.00 40.00 40.00 40.00 40.00 40.00 40.00 40.00		
BRONZE and RED							
Early Bronze. Orange bronze Indianola. Light bronze Alameda. Reddish bronze with buff reverse. Hilda Bergen. Bronze Glitters. Bright bronze Apricot Queen. Orange bronze Bronze Izola. Reddish bronze Red Izola. Deep red	Aug. 24 Aug. 29 Aug. 24 Aug. 29 Aug. 29 Aug. 29	S. Pom. L. F. Inc. L. F. Inc. L. F. Dec. L. F. Inc. Int. Anem. Int. Anem.	Spray Disbud Disbud Disbud Disbud Disbud Disbud Disbud	Sept. 15 Oct. 10 Oct. 25 Oct. 25 Oct. 28 Nov. 1 Nov. 1	40.00 40.00 40.00 40.00 40.00 40.00 40.00		



Pot Plant Varieties

BRONZE and RED—Continued

Name and Description	Last Pinch	Туре	Spray or Disbud	Matures	Rooted Price Per 1000
Indianapolis Bronze. Buff bronze	Aug. 29	L.F. Inc.	Disbud	Nov. 8	\$40.00
Red Melba. Red	Aug. 29	L. Sing.	Disbud	Nov. 10	40.00
Bronze Masterpiece. Apricot bronze		Int. Pom.	Disbud	Nov. 15	40.00
Gypsy. Pale reddish bronze		S. Anem.	Spray	Nov. 15	40.00
Garnet King. Deep, bright red	-	L.F. Dec.	Disbud	Nov. 18	40.00
Legal Tender. Bronze and gold		Int. Dec.	Spray	Nov. 20	40.00
Red Rolinda. Deep reddish bronze	*	Int. Anem.	Spray	Nov. 23	40.00
Bronze Frick. Light bronze	*	L.F. Inc.	Disbud	Nov. 25	40.00
P	INK				
Early October. Light lavender	Aug. 24	L.F. Inc.	Disbud	Oct. 10	70.00
Jewell. Bright rose pink		S. Pom.	Spray	Oct. 15	40.00
Justrite. Light rose pink		L.F. Inc.	Disbud	Oct. 15	40.00
Pink Izola. Lavender		Int. Anem.	Disbud	Nov. I	40.00
Indianapolis Pink. Deep lavender		L.F. Inc.	Disbud	Nov. 8	40.00
Thyra. Dark pink		L. Pom.	Disbud	Nov. 10	40.00
Queen of Pinks. (Pink Mandel.) Lavender		L. Pom.	Disbud	Nov. 10	40.00
Masterpiece. Tourmaline pink		Int. Pom.	Disbud	Nov. 15	40.00
Helen Frick. Rose pink		L.F. Inc.	Disbud	Nov. 25	40.00
Beautiful Lady. Deep lavender rays with cream					
white cushion		L. Anem.	Disbud	Nov. 25	40.00

Helen Frick

FERMATE

This new organic fungicide has proven of great value to mum growers in controlling Septoria Leaf Spot. Fermate is highly effective against many fungi including those causing damping-off on the propagating benches. Recommended by many Experiment Station investigators.

Fermate is compatible with Arsenate of Lead, Loro and Nicofume combinations.

3 lb. bag 90c per lb. 25 lb. drum 75c per lb.





Hardy or Garden Varieties

The following varieties have been selected from a large list and have proven themselves best suited for cut flowers as well as general outdoor display. Many florists have grown these garden varieties in the cloth house and greenhouses with excellent results. No black cloth treatment is necessary for September and early October flowering.

There is also an increasing demand from the retail customers for small plants in the spring as well as field clumps in early fall. Might we suggest planting some of these garden varieties around your greenhouse? This will give an array of color in the fall when the annuals usually are finished blooming.

Name and Description	Last* Pinch	Size & Type	Matures	Rooted Price Per 1000
Barbara Cumming. (Yellow Normandie). Buff yellow Early Yellow. Light golden yellow. Morning Star. Primrose yellow. Pomponette. Light buff yellow. King Midas. Light lemon yellow. Judith Anderson. Golden yellow. Yellow Irene. Light lemon yellow. Sport from Irene. Rodell Improved. Light lemon yellow.	June 20 June 20 June 30 July 8 July 8	Int. Dec. S. Pom. Int. Dec. Int. Pom. Int. Dec. S. Pom. S. Pom. Int. Pom.	Sept. 15 Sept. 15 Sept. 20 Sept. 20 Sept. 30 Oct. 15 Oct. 18 Oct. 20	\$40.00 40.00 90.00 40.00 40.00 40.00 40.00 40.00
WHI	TE			
Silver Moon. Cream white Jean Cumming. Ivory white North Star. White Avalanche. White Uvalda. Cream white White Jewell. White tinged with light lavender Silver Ball. Irene.	June 20 June 25 July 4 July 4 July 8 July 8	Int. Sing. Int. Dec. Int. Sing. Int. Dec. Int. Pom. S. Pom. L. Pom. S. Pom.	Sept. 15 Sept. 20 Sept. 25 Oct. 5 Oct. 10 Oct. 15 Oct. 15 Oct. 18	40.00 40.00 90.00 50.00 40.00 40.00 40.00
BRONZE a	nd RED			
Early Bronze. Orange bronze Nancy Copeland. Spectrum red Burgundy. Wine red Ruby Pompon. Ruby crimson Caliph. Deep red Red Velvet. Velvety crimson Aviator. Coppery red Indian Summer. Orange bronze	June 25 July 4 July 4 July 4 July 4 July 4	6. Pom. Int. Sing. Int. Dec. Int. Pom. Int. Dec. Int. Dec. Int. Dec. Int. Dec. Int. Dec.	Sept. 15 Sept. 25 Oct. 5 Oct. 5 Oct. 8 Oct. 8 Oct. 10 Oct. 15	40.00 40.00 40.00 70.00 40.00 70.00 90.00 40.00
PIN	K			
Early Wonder. Lavender Morning Glow. Mauve pink Jean Treadway. Light rose pink with dark center. Mrs. du Pont. Peach pink shading to rosy salmon. Lavender Lady. Lavender Allegro. Shrimp pink Jewell. Lavender Dark Pink Jewell. Deep Lavender. Sport from Jewell	June 25 June 30 July 4 July 4 July 8 July 8	Int. Dec. S. Dec. Int. Dec. Int. Dec. Int. Dec. Int. Dec. S. Pom. S. Pom.	Sept. 25 Sept. 25 Oct. 1 Oct. 5 Oct. 8 Oct. 15 Oct. 15 Oct. 15	40.00 90.00 40.00 50.00 50.00 90.00 40.00

^{*}Pinch three weeks later if wanted for plant sale or use in landscape border.

Gloeckner Company, Incorporated

CHRYSANTHEMUM CUTTING ORDER

Ship To:

15 East 26th Street New York 10, N. Y.	Date of Order	When Required	Ship Via:	
Quan. Variety Price Amt.	Quan. Variety Price Amt.	Quan. Variety Price Amt.	Quan. Variety Price Amt.	Quan. V
	D. P. Supreme 4	Indianola 4	Oct. Rose 4	Sun
	D. P. Valencia 4	Ind. Summer 1	Omega 9	Sun
Albatross 4	Debonair 9	Irene 4	Orch. Beauty 4	Sua
	Dec. GlLg. 4	Isobel 4	Orch. Queen 4	. Sun
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	Derigold 4		Pink Chief 4	Tha
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			Pink Mistletoe 4	Uno
	Early October 7		Pink Pearl 4	Uso
	Early Wonder 4		Pk. Treas, Is. 4	
	Early Yellow 4		Pink Turner 4	Val
Calling	Ed. Seidewitz 4	Jud. Anderson 4	Pinocchio 9	Ves
	Enchantress 4	Justrite 4	. Pixie 5	Vib
	Europa 4	J. W. Prince t	P'm. Dec. Gl'y 4	Vik
	Fire Bird 4	King Midas 4	Pomponette 4	Wh
	Freida 1	. l.akme 9	Princeton (
	Friendly Rival 4	Lav. Lady 5	Priscilla 7	Wh
	Garnet King 4	Legal Tender 1	Prosperity 4	Wh
	Garza Supreme 4	Lillian Doty 4	Quaker Maid 4	Wh
Discuse	Gladys Pearson 4		Queen 'o Pinks 4	Wh
Br. Buck'ham 4	Gleam 4	Lodestar 7	Red Daisy 4	Wh
Br. Daisy 4	Glitters 4	L. I. Beauty 4	Red Izola 4	VY h
ALLES AND		Major Bowes 4	Red Melba 4	
	Gold Lode 4	M. Moeller 9	R. Princeton 4	Wh
Br. Goldsmith 7	Goldsmith 4		Red Rolinda 4	Wh
· · · · · · · · · · · · · · · · · · ·	Gld. Emblem 9	Marketeer 4	Red Rust 9	WT
	Golden Glory 4	Mary L. Hall 4	Red Velvet 7	Wh
Br. Mistletoe 4	Golden Herald 4	Masterpiece 4	Revelation 5	
Br. Supreme 4		Matchless 9	Rev. Bushnell 4	Υ.
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	(3) 1 35 . 33 . 4	Meteore 7	Riviera 5	Yel
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Celestra 4		N. Copeland 1		Ye
			Sea Gull 4	Үе
	·	Navaho 5	Shasta 4	Y.
			Silver Ball 4	
Cincinnati 4				Уе
Citronella 4	I. Tobin's Yel. 4			Ye.
	I. Yel. Chatt. 4			Ye
		Nuggets 4		Ye
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15 East 26th Street New York 10, N. Y.



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